PACKAGING DESIGN

JAN / FEB 1961

what every designer should know about packaging materials

ALUMINUM FOIL

METALS
FABRICS

PAPERBOARD

ALUMINUM FOIL

METALS
FABRICS

ALUMINUM FOIL

what every designer should know about packaging materials

ALUMINUM FOIL

METALS
FABRICS

SELL IT in CCA Point-of-Sale Displays

Would you like a salesman in every store just selling your product or service? CCA's Display Division creates "salesmen"—like this sales-stimulating point-of-purchase display designed for Revlon. Perhaps your product calls for shipping containers that quickly convert into displays, floor stands, shelf extenders or giant spectaculars. CCA's Display Division adds the extra dimension—the best sales opportunity—to your product. To pack it—move it—sell it in the colors of CCA packaging.

CCA

CONTAINER CORPORATION OF AMERICA

World's largest producer of paperboard packaging
Chicago 3 . . . Local service from 122 strategically-located manufacturing centers

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Folding Cartons, Shipping Containers, Sefton Fibre Cans, Molded Plastic Products, Point-of-Purchase Displays, Paperboard

Photo courtesy of Gibson Art Company, Cincinnati, Ohio

Shelf life insurance that isn't premium priced

VITAFILM

Problem

Breakage and rewraps were an expensive problem to a large card manufacturer. The film that was supposed to protect the package didn't.

Solution

The Goodyear Packaging Engineer recommended a switch to VITAFILM, Goodyear's tough transparent film that's especially suited for paper products. He worked with the card maker ... converted his existing equipment ... turned out better-looking, stronger, longer-lasting packages. Goodyear technical service people will be glad to help solve your packaging problems. In most cases they can convert your equipment at no ultimate cost to you. For the dollars-and-cents story on VITAFILM, write:

Goodyear, Packaging Films Dept. B-6445
Akron 16, Ohio.

GOODYEAR

Vitafilm, a Polyvinyl chloride—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

Materials ■ *Construction* ■ *Graphics* ■ *Research* ■ *Marketing*

PACKAGING DESIGN *January/February 1961 Volume 2: Number 1*

Theme: WHAT EVERY DESIGNER SHOULD KNOW ABOUT PACKAGING MATERIALS

Much has been written about packaging materials, but little to serve the designer's viewpoint and needs. Thus, this issue's theme: "What Every Designer Should Know About Packaging Materials." Obviously, a single issue in a single magazine can only touch the surface. But it is a basic start towards better understanding of material use on the part of the designers—and better understanding of designer needs on the part of materials manufacturers.

ARTICLES ABOUT MATERIALS

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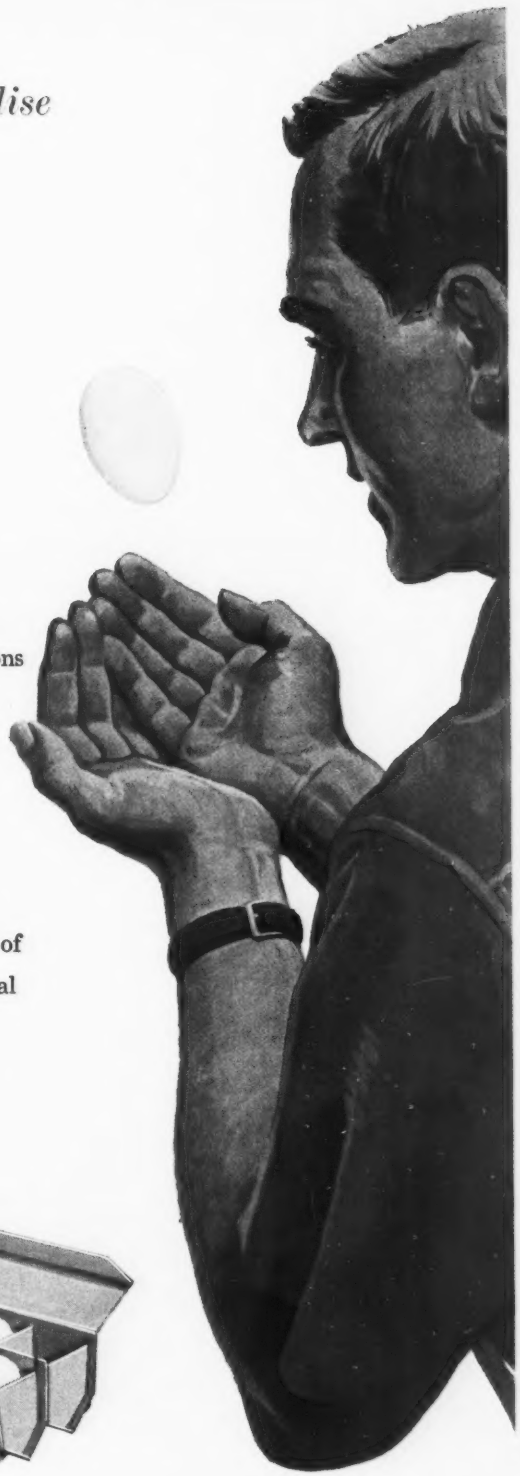
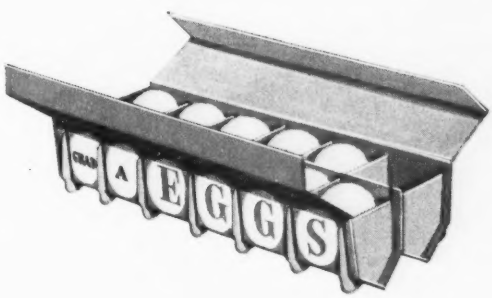
Planned Packaging moves merchandise



Ever play catch with an egg?

If you have, you'll appreciate the terrific protection job egg cartons perform. And they're marvels of packaging ingenuity, too! Just one quick pull on the flaps of this new Form-Fast carton and it snaps open, exposing seven partitions locked in place, ready to cradle a dozen eggs. A simple push closes and locks it again. Resultant filling line savings greatly reduced costs last year in the egg industry . . . helped hold down your family food budget, too!

Creative, cost-saving carton design is but one of countless ways in which Packaging Corporation of America's concept of Planned Packaging, implemented through integrated national facilities, produces better packaging . . . more sales. Whether your requirements are large or small, regional or national, we welcome the opportunity to help you.



Packaging Corporation of America

1632 CHICAGO AVENUE, EVANSTON, ILLINOIS

Cartons • Containers • Displays • Egg Packaging Products • Molded Pulp Products • Paperboards

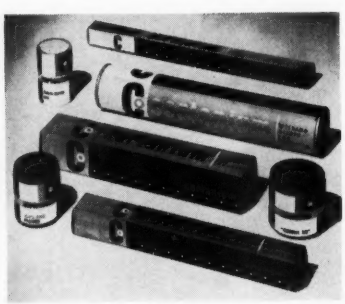
PACKAGE DESIGNS

In keeping with the materials theme of this issue, the package designs for this feature have been selected for their emphasis on materials. Shown here are eight such designs created by independent package designers. Additional designs, orginated at packaging users and packaging converters, begin on page 52.

READ & SEE

The transparent acetate lid on Proctor & Gamble's Lilt home permanent package gives the consumer an added opportunity to see what she is actually buying—once via the graphics which go all around the surface of the canister and once by looking through the lid at the actual components of the product. The rigid cardboard canister is reportedly economical to produce, sturdy enough to support the weight of the vinylcoated glass bottle with its push-button applicator, and so formed that it presents a large uninterrupted area where graphic design can be used to attract consumer attention.

Designer: Donald Deskey Associates, Inc., New York, N.Y.



BOLD STATEMENT

The myriad of materials, shapes and sizes necessary for packaging welding products demanded a flexible design format for this family of Certanium Alloys & Research Corporation's products.
The packages carry the new trademark of a capital C set in bold Gothic type with the small hot fire-ball. The package as a whole becomes an identifiable trademark through the use of powerful color combinations and a strong industrial type face for the copy. The red hot orange and white of the packages carry the feeling of the intense heat of the welders torch while the large solid black areas are designed to give the consumer a sense of strength and durability.

Designer: Scher & McDermott, Akron, Ohio.

here's the essence of persuasive packaging

The Answer Man! Got a question about packaging? Your ***Gardner Sales Representative*** has the answer—resourceful, sales-powered Persuasive Packaging.

New Whether Predictor! To buy, or not to buy? ***Gardner Market Research*** finds the answers and the reasons why—to guide the development of your package.

Shape of Things to Come! In ***Gardner Structural Design*** market-oriented ideas achieve form and function. Creativity is shaped by utilitarian and sales factors.

*What does an idea look like? Guided by research, ***Gardner Graphic Design*** applies color, type, and imagination to produce a design that changes lookers into buyers.

Nuts and Bolts! ***Gardner Machine Application*** adapts your production machinery to your new packaging program—efficiently and most economically!

Hypothesis meets the Housewife! Is it really a good idea? Will it sell? If it passes ***Gardner Package Testing***, you'll see it—if not, back to the drawing board.

***WHAT DOES AN IDEA LOOK LIKE?** In Persuasive Packaging, it's creativity with a road map—research visually interpreted—a design by design for greater sales. At Gardner, package design is both a flight of fancy and a hard-nosed approach to sales. Graphic Design provides the imagination, Market Research the direction and purpose. ¶ Before a Gardner Graphic Designer starts your layout, he studies all the product and market information prepared by Research. He gets to know your customers, their preferences, and the seemingly insignificant factors that motivate their buying habits. He learns your market, too. His design recommendations will show it. The end result is an effective selling idea—a market-oriented Persuasive Package. ¶ Isn't package design too important a part of your sales picture to be left to an artist's creative whim? Why not find out more about Persuasive Packaging—the most resourceful, completely coordinated packaging program in the industry?

D N

DIAMOND NATIONAL

THE GARDNER DIVISION

MIDDLETOWN, OHIO

EXAMPLE OF GARDNER PERSUASIVE PACKAGING

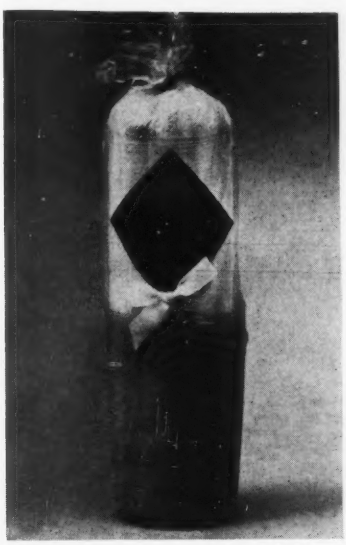
Here's a carton that reaches out to grab you if you're even a little bit hungry for ice cream. Like it? It's an economical Gardner stock design—and what's more it **sells.** ¶ This particular carton, created by Gardner Graphic Design, is just one of a line of one, two, and full-color pictorial stock cartons available to large and small ice cream producers alike. ¶ All cartons, whether stock or special design, are produced by the same Gardner Creative Group that walked off with top honors in the '60 Folding Carton Competition. ¶ Prize-winning Persuasive Packaging is available in paraffin cartons for the butter, margarine, and meat industries, too.

DIAMOND NATIONAL
THE GARDNER DIVISION
MIDDLETOWN, OHIO

OPEN STAGE

Opening for coffee table presentations in the home by direct-to-consumer salesmen, this introductory stage-box container, serves as a sales tool for a cosmetic line marketed by Mytinger Co., Los Angeles. The carton is designed to swing open easily, revealing to the potential customer three cosmetics fitted into the base of the carton.

Designer: Walter Landor and Associates, San Francisco, Calif.



TOWELS AND TUMBLERS

This heavy polyethylene tumbler turns an ordinarily practical item into an attractive gift with the added attraction of re-use. The rigid and lightweight package contains two fringed hand towels which have been rolled to fit into the tumbler and then overwrapped with Vitafilm for protection which at the same time gives full visibility. The label is printed in three colors . . . a black background with blue and red. To appeal to the shopper's individual taste, different colored tumblers were used to correspond with the variety of colored towels.

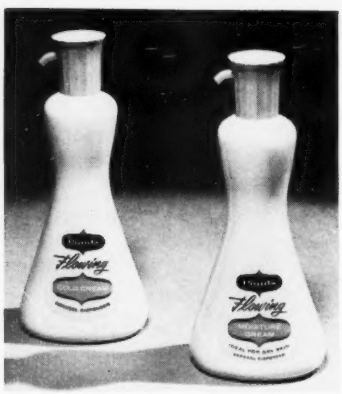
Designer: Harry Lapow Associates, New York, N.Y.

PLANNING WITH FIRE

The growing popularity of outdoor cooking has created a demand for a package which is clean, compact for display and branded for merchandising. Charcoal Brix filled this demand with a symmetrical array of hardwood charcoal briquets bonded inside a wax impregnated paper shell. This unique paper covering keeps the product clean right to the grill, then serves as kindling for easy lighting. The design provides proper draft to produce a controlled cooking fire. The Twin-Pack, two

sheets nested together, makes a compact unit for carrying, storage and display. The printed wrapper is red, black, and white.

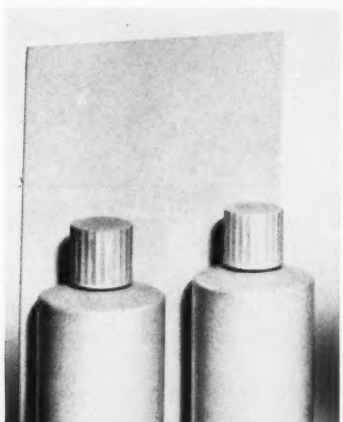
Trademark & Graphic Design: Dixon & Parcels Associates, New York, N.Y.



NEW POND'S FAMILY

Vinyl coated aerosol bottles have been designed to package the latest family of Pond's flowing cream products as they can be molded to fit thehand, are slip proof and will not break. The bottles bear a label, called the "mannequin" which gives the entire product line a new family relatedness. Closures are turquoise (for the Moisture Cream) and pale pink (Cold Cream). Same colors are repeated in the lower mannequin shape bearing the product name, and the logotype appears in white on a black mannequin. Outlines of both of these areas and the word "flowing" are in gold.

Designer: Frank Gianninoto & Associates, Inc., New York, N.Y.



FULL VISIBILITY

New types of packaging will be possible with "Delran," a paperboard construction containing a spotted area of specially formulated pressure sensitive adhesive. Due to the strong holding power of the adhesive, bottles, cans, cartons, and other containers can be firmly affixed to the paperboard without the need for various die cut devices and plastic blisters that partially obscure the product. At the same time the "Delran" can be removed easily by the user after the package is taken from the store to home. The construction reportedly provides cost savings through the use of less materials and through higher speed packing, either by automatic equipment or by hand.

Designer: John Zeigler, SH&L, New York, N.Y.

HiYield PRINTKOTE™

brings new all-white beauty to food packaging

French's
oven-ready
SCALLOPED POTATOES
Makes 4 to 6 Servings
Already Deliciously Seasoned
French's
SCALLOPED POTATOES
with pork chops...
Follow directions on the back of package, omitting butter. While potatoes are in oven, brown four pork chops in skillet. When potatoes have baked 15 minutes, top with browned pork chops. Bake 45 minutes more, or until chops are tender.
with ham...
Follow basic directions on the back of package adding 1 cup diced cooked ham before baking.
Try French's Instant Mashed Potato too!
Creamy smooth, fluffy-light mashed potato in seconds! No peeling, no cooking, no mashing, absolutely delicious!

This new package for French's scalloped potatoes is as modern as the tasty, convenient food it carries.

Pure white inside, outside and all the way through, this carton was produced by one of our customers in five-color rotogravure on our new economy bleached board—Brite-Pak HiYield Printkote.

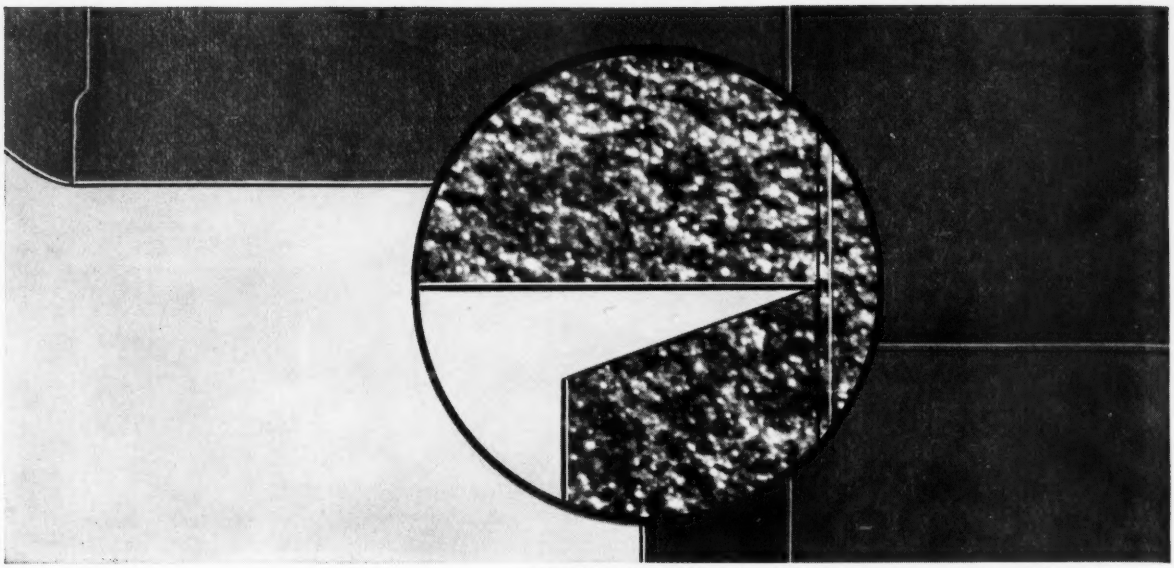
Made from 100% virgin bleached fibre, HiYield Printkote contains more square feet per ton than higher density boards, and therefore yields more cartons per ton.

While superior in quality, cartons manufactured from HiYield Printkote are comparable in cost to many packages made from much lower printing grades of non-virgin fibre boards.

Here is a new, economical bleached board that will add sales appeal where cost is a major consideration and printability a factor.

Get the facts on HiYield Printkote—write Bleached Board Division, West Virginia Pulp and Paper Company, 230 Park Avenue, New York 17, New York.

West Virginia Pulp and Paper



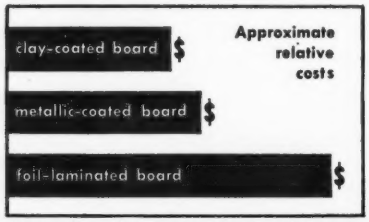
Magnified view of Weyerhaeuser's new silver-coated boxboard shows the minute flakes of metal in the coating. The coating features high gloss and scuff resistance, better bending and scoring qualities, is highly receptive to normal or high-gloss ink, varnishes, lacquers and film laminating, and can be printed with equal excellence by offset, gravure or letterpress methods.

Now Economical Metallic-Coated Boxboard

Metal application offers new merchandising advantages at substantially less cost than foil laminates.

New markets are open for boxmakers—the result of the announcement of a startling new silver metallic-coated boxboard marketed by the Boxboard and Folding Carton Division of Weyerhaeuser Company. Specially suited for luxury gift packaging, packaging of oily or greasy contents where loss of oils does not affect marketability, or where beauty of a metallic surface is desirable, the new board offers an actual metal-flake coating.

The new board eliminates forever the many inherent problems of foil laminates —high production costs, need for long runs, high percentage of rejects because of handling difficulties, limited printing varieties, slow press speeds, etc. Important, too, is that the metallic-coating can be applied to any of the standard boards available from Weyerhaeuser—news back, Kraft back or white manila back.



Above chart shows approximate relative cost of: (1) clay-coated board, (2) metallic-coated board, and (3) foil-laminated board.

Excellent Printing Characteristics

The printing characteristics of the coating are excellent. Smooth and high luster satin finishes are readily attainable. The board has high receptivity to normal and high-gloss inks, varnishes, lacquers, and even film laminating. High viscosity (tacky) inks have also been tested on the new silver metallic-coated board and were found to have a minimum of "surface picking" and "offsetting."

Another important feature is that the silver metallic-coated board can be printed with equal excellence by offset lithography, gravure, or letterpress methods. Halftone screens up to 150-line for offset lithography and gravure printing, and up to 133-line for letterpress printing have been tested and found to be trouble-free as normal white clay-coated board.

Boxmakers and packagers, alike, will be particularly interested in the excellent scoring and bending characteristics of the new silver board. These features make it possible to run metallic-coated board with the same high degree of scoring excellence and machinability found in other more commonly used boards.

Severe laboratory tests conducted by Weyerhaeuser technicians have checked the new board and its possible adaptation to packaging a wide variety of commercial products requiring a range of packaging techniques and storage conditions.

Board Minimizes Oily Show-Through

In numerous tests, it was found that the silver-coated board is excellent for packaging lightly oiled machine parts, dog foods, soaps, and certain medicated salves with extremely high grease-penetrative qualities. Oils are not prevented from penetrating the board, but the presence of oils on the package surface is "masked" and cannot be seen. Soap packaging tests showed no penetration of fatty acids over a five-month period.

In other tests, oils applied to the inside surfaces of cartons showed no visible penetration even after a two-month period. Turpentine—the severest critic of boxboard —was tested over the same two-month period with equally satisfying results—no apparent show-through.

Weyerhaeuser technicians are available to assist boxmakers and packagers in analyzing their requirements and solving challenging problems of difficult-to-package products. For further information and actual samples of the new silver-coated board, write WEYERHAEUSER COMPANY, Boxboard and Folding Carton Division, 919 North Michigan Avenue, Chicago 11, Illinois.

BOXBOARD SIMULATES
WOMAN IN SHOWER

A combination of boxboard, and polyethylene were used on this bag and holder package for Venida shower caps.
The shower cap shows through the clear polyethylene, resting on a simulated face of a woman printed on folded boxboard sheet.
The selling copy on top is printed red, white and blue on folding boxboard.

Designer: Robert I. Goldberg, Associated Industrial Designers, New York, N.Y.

MANY TALENTS

Corrugated board served many functions in the design of these packages for a new line of Corning Ware cookware products. The packages required the combined talents of shipping, display, demonstration, gift appearance and reshipping to the consumer.
The basic structure was corrugated board designed to withstand shipping. Then a frame view carton was devloped which would conceal the raw edges of the corrugated board for display.
The final package consisted of a double walled box, separate telescope cover and platform all of corrugated, plus a litho coated display card.
Because of the overall large size of the cartons, the designers created a one color design for economy in printing which allowed for a more expensive display card, which does the actual selling job.
A soft Wedgewood blue color was used with simple graphics and a minimum amount of copy to convey a gift connotation.
The display card can be removed from the gift package whereupon a small booklet informs the recipient of the product features.

Designer: Alan Berni & Associates, Inc., New York, N.Y.

What Lord Baltimore's micro-screening means to a frozen food package

MICRO-SCREENING is the heart of Lord Baltimore's revolutionary Fidel-I-Tone® process. One that continually results in award-winning packages such as the Pepperidge Farm® frozen pastry line.

Fidel-I-Tone gives precision sharpness and unmatched color brilliance to packaging. Reproduction qualities never before possible with conventional lithography. Fidel-I-Tone is ideal for today's pictorial packages that *must* sell on sight.

Lord Baltimore was the *first* in the folding box field to successively offer 4-, 5- and 6-color offset presses. Now, all our plants offer these versatile presses as well as rotogravure and letterpress equipment. Novel carton construction and a wide range of finishes are also available.

We can construct a carton precisely designed for your product. Write: 425 Park Ave., New York 22; San Mateo, Calif. or 333 N. Michigan Ave., Chicago, Ill.

Lord Baltimore Press

MATERIAL DEVELOPMENTS

STAIN PROOF BOXBOARD

A silver-coated boxboard employing aluminum pigment, has been developed, to mask oils and stains which penetrate the outer surface of a package from within. The product is reported to be receptive to all normal printing inks and reproduce both offset and letterpress impressions equally well. In addition the new pigmented board offers unusual bending qualities. Potential applications are seen in the area of low cost gift packaging and the packaging of oily or greasy products.

Weyerhaeuser Company, Chicago, Ill.

NO DEPOSIT

A lightweight glass bottle designed for one-trip service in the packaging of cream has been introduced. Called the Econo-bottle, the new container weighs only five ounces, compared with eight ounces for the standard-weight. The package is priced so low that it can be used for one-trip cream service in stores where dairies have been experiencing bottle return problems. It will fit in most cases used for standard-weight, tall half-pints, and will work in oblong half-gallon washer pockets. The bottle is attractive to the retailer because of its no-deposit, no-return feature. Available with a 38mm finish, it has the advantages of visibility, rigidity and flavor protection.

Owens-Illinois, Toledo, O.

MOISTURE BARRIER

A black pigmented polyethylene resin for extrusion coating onto paper, paperboard, or aluminum foil has been introduced. Known as Petrothene 201-220, this polyethylene resin is made for application in agricultural mulch-coated paper and packages for photographic film or paper. Coatings, made from the resin, provide a light and moisture barrier.

U.S. Industrial Chemicals Co., New York, N.Y.

How LORD BALTIMORE helped create an award-winning package for Pepperidge Farm®

THE UNIQUE Pepperidge Farm frozen pastry package was designed by J. R. B. Rawlings. The 4-color photograph that dominates each carton had to look appetizing. *The package had to sell itself.* That is why Pepperidge Farm selected our Fidel-I-Tone® process.

Step by step ritual

To start, Lord Baltimore controlled every phase of art preparation and photography. From exacting color separations we made the vital micro-screened 175-line plates. (That's finer than high-quality magazine color plates.) Finally, the cartons were printed and carefully coated with a high-gloss finish to prevent freezer damage to the packages and product.

From Fidel-I-Tone to freezer

Lord Baltimore received *another* Technical Superiority in Printing award for this line. Today, Pepperidge Farm is filling and sealing these award-winning cartons on new equipment—also engineered by Lord Baltimore.

Matched nationwide facilities

Lord Baltimore's folding box plants are located in Baltimore, Md.; Clinton, Iowa and San Leandro, Calif. They are backed by the complete resources of International Paper's mills and research centers. Our matched nationwide facilities and 11 sales offices serve these packaging fields:

Frozen Foods	**Pharmaceuticals**
Dry Foods	**Beverages**
Cosmetics	**Tobacco**
Dairy Products	**and many others**

SANDWICHES IN POLYETHYLENE

Polyethylene bags have been adopted by a Cleveland hospital for packaging individual slices of bread and sandwiches. Inherent moisture retentive qualities of the material are found to keep the bread soft and moist for long periods of time. Easy opening of the packages is achieved through use of the Zip-Strip, a series of serrations at the bottom of the package which, when pulled, open the bags.

Dobeckmun Company, Cleveland, O.

CORRUGATED AND PLASTIC FOAM

A package, made of a combination of corrugated and foam plastic, is reported to be saving Puritron Corporation of New Haven 30% in packing material costs, 30% in packing time, and 10% in shipping weight. Manufacturers of the carton: Holyoke Custom Moulded Products, Inc., Holyoke, Mass.

WAX LAMINATING

A wax laminated paper board has been introduced for folding cartons which is moisture and grease-resistant. Tradenamed "Peel Proof," it offers advantages in the packaging of dense or high bulk products in giant size cartons. It is also reported to be strong enough to resist side seam delamination and "leakers" which result from the pressures of modern warehouse and supermarket stacking conditions.

Container Corporation of America, Chicago, Ill.

TWO NEW FILMS

Two flexible transparent films have recently been made available. The films are special combinations of two light gauge cellulose base shets with a thin polymer resin inner ply. One has improved moistureproof, heat sealing, notrocellulose coating on both surfaces. The other has a polymer coating on both surfaces to give strong heat sealing and moisture and gasproof characteristics. Both surface coatings are fully bonded to the base sheets. Called the "T" films, they also react to printability tests to the same inks and processes which are used on similarly coated single-ply cellophane sheets.

American Viscose Corporation, Philadelphia, Pa.

NEW PAPERBOARD

A new paperboard, made from a homogeneous blend of virgin pulpwoods, has been announced. In addition to carton use, the new paperboard is designed for the making of formed food plates and trays. Called North Brite Blended, it is a solid sheet, and being homogeneous, provides strength and rigidity with thinness and light weight. Thicknesses of the new board range from .010 to .24 thousandths of an inch.

Packaging Corporation of America, Evanston, Ill.

COLORED POLYSTYRENE PELLETS

Development of the first internally colored polystyrene pellets has ben announced. The pellets have been developd to provide more intense colors and improved bonding. In citing the advantages of internal coloring over dry blending Dow plastics engineers explained that putting anything on the surface of a bead (i.e. pigment) hinders the fusion of the beads in the mold. Since color is relative to density, only pastel shades could be achieved easily with dry blending because the color coated beads would never fuse at the high densities necessary for dark, intense color. Available in red, green, blue, yellow and black, as well as natural (white).

Dow Chemical Company, Midland, Mich.

MILK PACKAGING

A milk packaging process has been developed which enables whole milk to be sterilized and stored indefinitely without refrigeration. The package enables paper to compete in the field of aseptic packaging. Material consists of a three-ply laminate: 90 lb. paper/ 1 mil foil/ extruded coating of 2 mil polyethylene on the inside. The tetrahedron-shaped package opens easily without the need for openers.

Western-Waxide Division, Crown Zellerbach Corporation, San Leandro, Calif.

Why sell her just one?

Sell her more with multi-packs of

AVISCO® CELLOPHANE

Manufacturers increase sales with multi-packs. So do retailers—and they have less handling; faster pricing, stocking and checkout. Consumers get shopping convenience and worth-while economy. Best packaging material for profit-building multi-packs? Cellophane! It offers pure transparency, maximum product protection, unmatched machine performance, and it prints beautifully. We offer a complete packaging service to assist you and demonstrate the benefits of Avisco cellophane in multi-packs. Contact us for an appointment with our representative or a selected cellophane converter.

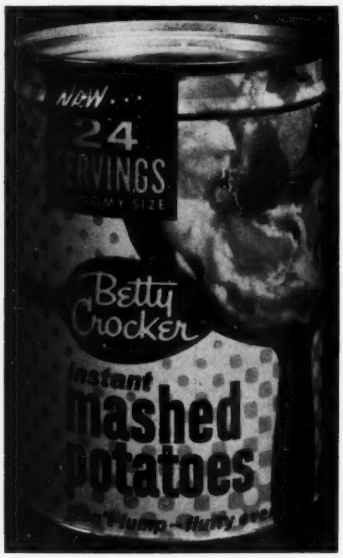
Write for our new booklet— "Multi-Packs with Avisco Cellophane."

AVISCO®

AMERICAN VISCOSE CORPORATION, FILM DIVISION, 1617 PENNSYLVANIA BLVD., PHILADELPHIA 3, PENNSYLVANIA.
SALES OFFICES ALSO LOCATED IN ATLANTA, BOSTON, CHICAGO, DALLAS, LOS ANGELES AND NEW YORK.

CAPSULED CASE HISTORIES

In this issue the material aspects are stressed.



Packager: General Mills

Designer: Lippincott & Margulies

Two problems were solved by putting General Mills' Betty Crocker Instant Mashed Potatoes into a tin can—the first time this type of product has been canned. First, because there are 24 portions, it was felt that the conventional carton would not be the best package to keep the potatoes in good condition. Second, again because of the large number of portions, the paper carton would of necessity be large, unwieldy and difficult for shelf stacking. The 21-ounce can opens via a key similar to the kind used for most coffee cans. It has been designed to reclose easily in order to keep the potatoes fresh for continued use. The product is packed in nitrogen, used in the food industry to help protect the flavor from the influences of ordinary air. The package design features a pottery saucepan of ready-to-eat mashed potatoes on a fresh yellow and white background. The product is now in test markets in four cities, Providence, Syracuse, Clevland and Indianapolis.

Packager: Cresta Blanca

Designer: Warren A. Clark, The Dobeckmun Co.

A holiday gift package for Cresta Blanca champagne presented two distinct problems to the designer. First the package needed gift appeal with a non-commercial appearance for the mass market of both low and high income groups; second, it had to be functional. Warren A. Clark, a Dobeckmun package designer, selected metallized Mylar as the material for the flexible bag gift wrap. The Mylar was laminated with a gold solvent to give a glittering background. Then Mr. Clark had the package printed in traditional green and gold, and red and gold combinations to create activity and a gay mood. At this point, the product was hand packaged and the bag closed at the neck with a quarter-inch yellow cord. The cord was wound with Lurex, a decorative non-tarnishing metallic yarn.

Good Show!

Striking Ekco-Alcoa aluminum packages have a high performance I.Q. They carry products unscathed throughout the production, distribution, and customer-use stages of marketing. Food can be frozen, heated, and served in one attractive container. Hermetically-sealed, Ekco-Alcoa containers keep moisture-sensitive products such as pharmaceuticals or ball bearings with complete safety.....These versatile performers nest compactly, take up little space in a plant or warehouse. Their precise uniformity makes them ideal for high-speed production lines, and they weigh next to nothing, assuring low shipping costs. They can be covered with a wide range of materials—foil, paperboard, heat-shrink film, you name it. The closure equipment, itself, is available from Ekco-Alcoa on either a sale or rental basis.....*Encore:* surprisingly low unit cost is made possible by modern mass production methods. Your nearby Ekco-Alcoa distributor will be happy to furnish details. Or write direct. **EKCO-ALCOA CONTAINERS INC.**

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The Plus Container

EKCO is the registered trademark of Ekco Products Company. ALCOA is the registered trademark of Aluminum Company of America. The corporate name and combination mark, EKCO-ALCOA, is used under license to the manufacturer by each of these companies.

Packager: Rose Frozen Food Corporation

Designer: Milprint, Inc.

In a break from normal wax paper frozen food packaging, Rose Frozen Food Corp., began marketing its shrimp line in a 2-ply wax lamination of cellophane and 8½# tissue. The new wraps were aimed at pepping up package appetite appeal with full color serving vignettes of the product. Illustration is reverse printed to sparkle through the clear cellophane, which—in turn—makes the design invulnerable to handling wear and shipping scuffs. The tissue is designed to bolster the strength of the cellophane, and make it less liable to cracking and breakage under conditions of the freezer cabinet. Shrinkage of the cellophane sometimes brought on by moisture evaporation is lessened since the tissue adds a note of dimensional stability to the package. Wax is used to join the materials and make possible heat seal wrapping on automatic packaging equipment. The wrap reportedly can run at speeds approximating the wrapping of cellophane—up to 125 per minute. The wraps were printed rotogravure in seven colors.

Packager: Bachman Bakeries Corp.

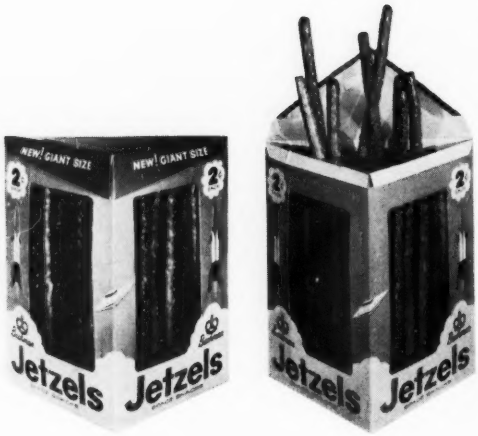
Designer: Dixon & Parcels Assoc., Inc.

A plastic cannister became a folding box when Bachman Bakeries Corporation decided to rename and repackage a pretzel product. The company renamed the product "Jetzels," in keeping with the jet age. They commissioned Dixon & Parcels to design a package to meet the following requirements. A display unit to replace their present plastic container with a metal lid that was filled by the dealer from a large metal container in which the pretzels were shipped from the bakery. The tins were returned to the bakery for refilling. The detached lid was often left off the plastic container, leaving the contents

ow, many-colored decoration can be *molded in* for wearproof beauty... and production economy. There's no costly ter-decoration. The pattern is actually part of the molded Beetle urea plastic—won't chip off, scratch off or wear . With their new decorative glamour, Beetle plastic closures *still* offer the very practical in-use advantages that ve kept them "on top" for 25 years: resistance to alcohol, acetone and common solvents; a strong grip on ntainers in shipping and shelving; dust repellence, because they don't build electrostatic charges. Beetle plastic mes in any color, can be molded in practically any shape. Write for details about new *decorated* Beetle plastic caps.

MERICAN CYANAMID COMPANY CYANAMID PLASTICS AND RESINS DIVISION

allingford, Connecticut. Offices in: Boston · Charlotte · Chicago · Cincinnati · Cleveland · Dallas · Detroit · Los Angeles · Minneapolis w York · Oakland · Philadelphia · St. Louis · Seattle · In Canada: CYANAMID OF CANADA LIMITED, Montreal · Toronto



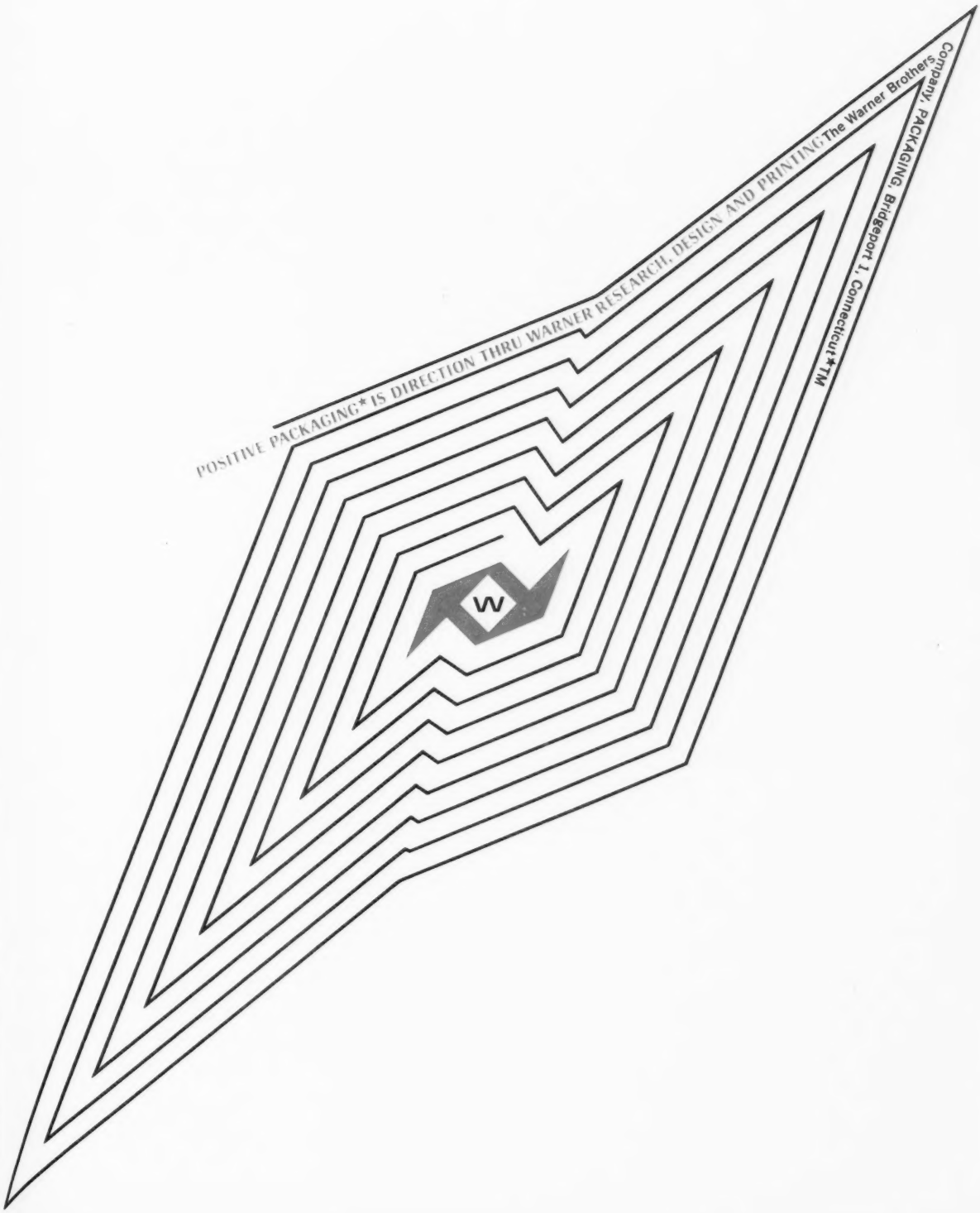
exposed. The need for the dealer to fill the plastic cannister as it became empty was time consuming; therefore the cannisters were not always refilled as often as they should be.

The problem was to design a package to replace this unit—one that could be disposed of after it was emptied. It had to be made on existing equipment and be packed in the Bachman plant without an investment in new machinery.

The lid had to be attached to the container and to incorporate a locking device so that the contents would not spill out if the display was knocked over on the counter, or turned over in packing. This lid had to be self-locking, but one that could be easily opened by the flip of a child's finger. The box had to be sift proof, so that particles of salt from the pretzels would not be left on the dealer's counter. The package had to provide good visibility of the product. The box also had to be compact for safe and easy shipment. It had to be moisture resistant to keep the Jetzels crisp and fresh. The surface design had to be an attention getting one, that would appeal to children, in a theme reflecting the new product name, to motivate sales.

A triangular shape folding box was decided upon. It fit all the requirements of superior display, and with the false crease was produceable on existing folding box equipment. The broad base of the triangle served as a hinge for the self-locking lid. Cellophane windows were incorporated to give visibility to the product.

The folding board is moisture resistant, and keeps the Jetzels fresh even after repeated openings. The lid opens with a touch of the finger. These packages are packed six to a corrugated carton for shipping and make a compact unit. The package enables Jetzels to go into markets that were heretofore closed because of the need to refill the old container. The package is popular in school cafeterias and neighborhood stores.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Dobeckmun is geared to give
your gift package the distinction
that today's competition demands.
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use of the widest range
of packaging materials
available from any one source!

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what every designer should know
about packaging materials

PART I new developments in
packaging materials
by Walter Stern

PART II

ALUMINUM FOIL
CELLOPHANE GLASS
PAPERBOARD
PAPER METALS
FABRICS
POLYETHYLENE
VINYL FILM

PART III packages designed with the
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PART I new developments in packaging materials

By Walter Stern
Vice President and Technical Director
Packaging and Graphics Division
Raymond Loewy/William Snaith, Inc.
New York, N.Y.

Let us not be complacently deceived into believing that any packaging technique, because it has been well established for a long time, is necessarily satisfactory, or even adequate. It seems to be obvious that the increasing rise of disposable per capita income in the United States will in turn lead to increasingly discriminating and diversified shopping. The necessity to continually re-appraise consumer buying habits and consumer preferences will obviously lead to continual packaging improvements, and these can be successfully developed only with a comprehensive command of the latest packaging materials and packaging production techniques. As manufacturers endeavor to keep abreast of this changing market through constant re-evaluation of marketing situations, they will turn increasingly to independent, unbiased professional advice and guidance in the exploration of better packaging as an improved sales tool. And here the independent professional package designer is faced with an extremely difficult task.

He has an obligation, on the one hand, to search out and stimulate intimate and detailed discussion and exploration of the newest packaging developments in all of the many fields he may be concerned with. He has also an obligation to his client to be acutely aware of the many peculiarities, significant advantages, and possibly restrictive features of any packaging material or process; if at all possible to the extent that he is as well versed in his field as a production technician of the packaging industry he is exploring. On the other hand, as an independent professional designer, it is to his advantage that he is not allied to any particular packaging industry, and can therefore afford to keep an open mind as to which material and technique, or which combination of several, will serve his client best. He is also used to a degree of freedom in creative thinking which will enable him to "constructively disregard" some of the restrictions placed upon him by tradition and by standard production requirements, and in doing so he will not only advance the cause of his client, but may at the same time stimulate the packaging material manufacturer into entirely new developments or variations of established materials which may in the future turn out to be highly profitable. In this the independent professional designer is especially guided by his broad knowledge of all

fields impinging on the highly complex merchandise distribution and sales process.

The past year has been especially rich in exciting developments, and in innovations of tremendous potential in the packaging field. It could therefore serve as a real incentive towards a confident prediction of what the immediate future in packaging holds, if it were not for the fact that these predictions are very often dogged by errors in evaluating tempo, scale ,and import of specific packaging trends. Let it suffice, therefore, if we review some of the recent developments which I believe to be of special significance to package designers looking for better, technologically advanced solutions to new problems.

In the field of liquid containers, far reaching strides have been made in replacing glass and metal by plastic films, or film laminations, and at the same time important innovations have reached the retail distribution stage in glass and metal containers. In all of the cases in which films are used to create liquid containers, the containers are formed at the filling site from flat sheet or rolled stock; are much lighter than glass, and are easily disposable without involving the cumbersome and costly machinery of handling the return of empties, or the ever-present danger of possible injury lurking behind empty "no returns." Evidence of increasing inroads into the glass and metal field are the plastic containers developed from roll stock by vacuum or thermoforming, and an examination of some of the recent packages produced by Leedpak, Ultra Pak, and Albert Mojonnier's Kartridge-Pak Division (the latter of which has developed its packages especially in the dairy field in order to supply the industry with pint and half pint milk containers formed from plastic films) should be rewarding. Other liquid packages of considerable interest are those used by products such as gelatins, pudding desserts, dehydrated soups, dry cereals, cake mixes dehydrated potato products, and frozen fresh berries, in order to replace glass or metal with a handier and less expensive materials. Most of these seem to follow the bag-in-box principle, and were partly developed by collaboration with Alcoa and Reynolds in foils, and with Crown-Zellerbach in paperboards. Kaiser Aluminum Company, on the other hand, has been

Old Forester gift decanter and Christmas gift package designed by Raymond Loewy/William Snaith, Inc. Gift package made of aluminum foil, mounted using ½ mil of polyethylene, to bond paper for strong attractive pre-wrap that is at the same time reflective. Colors: red, copper, black, gold, blue, olive green, purple and emerald green.

Metrie Hosiery Sock packages, designed by Raymond Loewy/William Snaith, Inc. Socks are held firmly in a cardboard tray inserted inside a re-usable polyethylene bag with a patented zipper closure.

working on an all-foil pouch which is joined entirely by pressure instead of using the conventional "double fold and adhesive" method. In this connection the use of ultrasonic welding methods may become more practical in 1961.

This development of plastic containers has of course been greatly assisted by recent raw material price reductions and by the increased production and use of materials which seem to be suitable for the packaging of products heretofore not amendable to films. This is especially true of Minnesota Mining's "Scotchpak" fluorine films and of polypropylenes. The latter, especially, have for the first time made possible the production of portion controlled single-use packages for distilled alcoholic beverages.

The can industry and glass industry, on the other hand, have not exactly been asleep either. The glass people have recently succeeded in greatly increasing acceptance for extremely low weight, maximum strength containers for carbonated beverages and beers, which are generally referred to as "neckless wonders" because of the fact that a minimum neck joins the orifice to the body. Considering the fact that most of the uses to which these containers are put entail the pressure application of crown caps, their vertical compression resistance is truly amazing, especially when glass cross sections are studied. These, of course, are single use, one-way containers functioning without the necessity of establishing a complicated deposit structure at the retail level, or requiring return, washing, or sterilizing and refilling.

The can industry has countered both by the pilot production of extremely light weight tin plate, and by the use of aluminum foil, or foil paperboard combinations in heretofore unexplored areas. Especially interesting is Alcoa's recent development of a self opening can, first tested late last year on fresh frozen concentrated orange juice, which contains its own opening key on the top. This can development, in which United Shoe Machinery Corporation participated, proved to be extremely attractive especially to the Florida citrus fruit packers, and while apparently no large scale production facilities are available, consumer tests seem to have indicated a decided preference for the easy-opening "tear-top" aluminum can. Kaiser

Aluminum, on the other hand, has apparently collaborated with Central States Paper Corporation to produce another type of easy-opening aluminum can for non-process foods. This package can be reclosed after it has been opened. One of the prime advantages in all of these ventures, whether it be United States Steel's development of "Ferrolite" half thickness tin plated steel, or the light weight glass bottle for one trip service in the dairy industry developed by Owens-Illinois Glass Company, is the reduction of materials handling and freight costs.

Other developments which are bound to stimulate the imagination of the inventive package designer are those in the field of foamed plastics, especially foamed plastic films, which have recently been developed to the extent that laminations to paperboard, embossing, thermoforming, scenting and other techniques are possible. Their pleasant, soft feel, their great resilience and cushioning qualities, the range of available colors and surface textures, as well as their excellent insulating qualities, greatly recommend them for a large variety of new packaging uses. Polypropylene, which was mentioned before, has made tremendous strides both as film and as molded package. In the molded package its capability to form a self hinge has been increasingly explored, in film form it has in some cases replaced cellophane, polyethylene, or saran as capable bread wrap.

PRINTING TECHNIQUES

Thermoforming has been increasingly perfected so that in some cases containers and their tops are formed in the same process, and undercuts are frequently used to create snap lids. Polyethylene has made tremendous strides, especially in the replacement of glass and metal containers for detergents and liquid cleaners. Because of the increasing complexity of the field of polyethylenes, it is mandatory that package designers considering the use of this material work closely with producers and their development laboratories in the adaptation or exploration of the material. From a simple film with highly predictable, fairly uniform and easily recognizable qualites, this material has explosively developed into one of the most sophisticated, adaptable, and increasingly tailor-made packaging materials.

Because by far the largest packaging budget is expended in the food field, and because by far the largest percentage of retail purchases in this field is made in the supermarket area, supermarket food packaging has exerted increasing pressure on printing techniques to result in a more superior, faithful reproductions of food photography. In this field especially great strides have been made, and some outstanding examples have appeared in the 1960 market. Foils and films have also become increasingly capable of serving as the base for better printing reproduction, and ten color reproduction in 175 and 200 line screen rotogravure on foil is not uncommon. Embossing techniques in the same materials have also advanced to some extent, although a great deal is still left to be desired in the field of large quantity, high quality, high speed production of registered embossing on foils, paperboard, and laminations of both.

Those clients who participate in initial exploration of marketing possibilities of new materials or new packaging techniques are truly "pioneering," and that all of the great advantages and possible disastrous disadvantages of pioneering should to some extent be anticipated. Only the conventional package which has been produced for years with a maximum of predictable quality control, can be counted upon to serve as rapid-fire marketing tool for a new commodity or new product, where fast timing in hitting the market is of the essence. If, on the other hand, a product is so new that it would greatly benefit from a new packaging technique, or if a product's margin of success or failure in terms of sales profits is so slight that any possible advantage in packaging structure or packaging technique should be seriously explored, then it is of advantage to the package designer to be in a position to command a thorough and well detailed knowledge of the newest packaging materials and processes applicable to the problem. The fact that he is an outsider, and that his knowledge of processes and production requirements is of necessity limited, can in this case turn out to be the deciding factor in creating a complete lack of prejudice and conventionality in approach, and in cutting through the well-worn stereotypes of package material application and package design towards a shiningly new example of extreme simplicity in exploring new packaging methods to their maximum potential. ■

PART II
What every designer should know about nine packaging materials

By J. T. Trousdale, Product Manager, Laminating Division, Anaconda Aluminum Company, Louisville, Ky.

aluminum foil is available in many forms. Often it is laminated or mounted, to varying thicknesses of paper or paperboard. Sometimes, one finds heavy gauge foil with no backing, but most often, for packaging or advertising, the foil is laminated to a paperstock.

A wide variety of surfaces are available. The texture of foil is principally dependent upon the manner of rolling in the final rolling stages. Satin finishes and many embossed textures are available, but most widely used is the bright finish.

COLOR RESPONSE

This foil has no color, yet responds to the colors it reflects and those printed upon it. Each movement of the observer or background changes the illusion on the surface of the foil and the designer must learn to control the illusory movement for greatest effectiveness in designing. □ Aluminum foil responds to transparent color in a unique way. Two brilliant colors, when overprinted, combine to make an equally brilliant third color. Transparent colors on aluminum foil offer startling and exciting challenges to the imagination of the innovator. The entire range of colors in the spectrum can be printed on foil in either transparent, translucent or opaque inks.

TRANSLUCENT COLORS

Translucent colors have a tendency to offer as great a challenge as do the transparent colors. The translucent effect is achieved by mixing a small amount of white pigment with the transparent color ink. The result resembles the finish on the surface of a pearl. In recent years, many printers have experimented with the use of fluorescent pigments. These experiments have been a real success and offer the designer a new field to explore. □ Opaque colors printed on foil appear about the same as they do on conventional paper stock. With proper planning, one opaque color and one transparent or translucent color will give the designer the equivalent of a three color job. □ One word of caution is necessary in planning the types and use of the different inks. When an opaque color adjoins a transparent color, the overlap produces a third color which is also opaque. Often this is undesirable and can be eliminated by providing a thin gap of foil the adjacent areas of color. □ It is often desirable to feature a strong title or brand name. This can sometimes be done more effectively by outlining the letter forms with foil. If the letters are to be transparent color, an opaque outline may be effective.

USE OF PATTERNS

Patterns are one of the devices which have unlimited possibilities for designing for reproduction on foil. Patterns, with small areas of shining foil showing through, can offer a touch of elegance. □ Aluminum foil lends itself to all forms of embossing, blank stamping and textured pattern embossing. The reflective quality of aluminum foil emphasizes the effect of the embossing sharply. Embossed overall patterns have two major advantages. The first is that the over-all pattern minimizes the effect of minor surface scratching and fingerprinting on large exposed areas of foil. The second advantage is that since embossed patterns also hide rough surfaces less expensive mounting stocks, can be used. □ Body or text copy should not be printed directly on a shiny foil back-

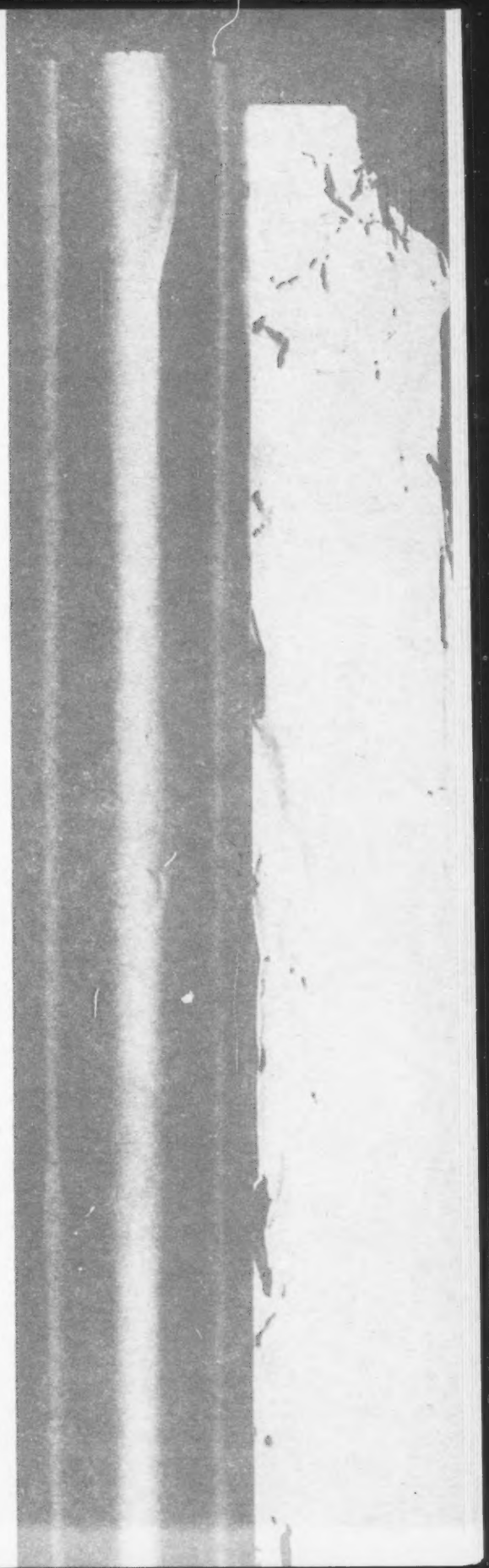
ground. In the interest of legibility, it is suggested that small copy be printed on an opaque color background. Translucent colors may also be used; however, these should be tested for legibility.

PRINTING AND PRODUCTION

Aluminum foil can be printed by either offset lithography, letterpress or gravure using conventional equipment. For small quantity runs and for the special effects, peculiar to the silk screen process, aluminum foil is an ideal material. Printers should be cautioned to check their inks and drying processes when planning to run a foil job. This is especially necessary for multi-color presses. Foil is not absorbent as is paper. Therefore, inks must be formulated accordingly. □ Foil is also a vapor barrier which can cause some problems in adhering foil to another surface. □ Glues or adhesives should be tested before production is begun. □ Four-color process printing is quite satisfactory on foil. For best results, it is necessary to first lay down a white opaque ink in the areas designated for the 4-color process illustrations.

SILK SCREEN PRINTING

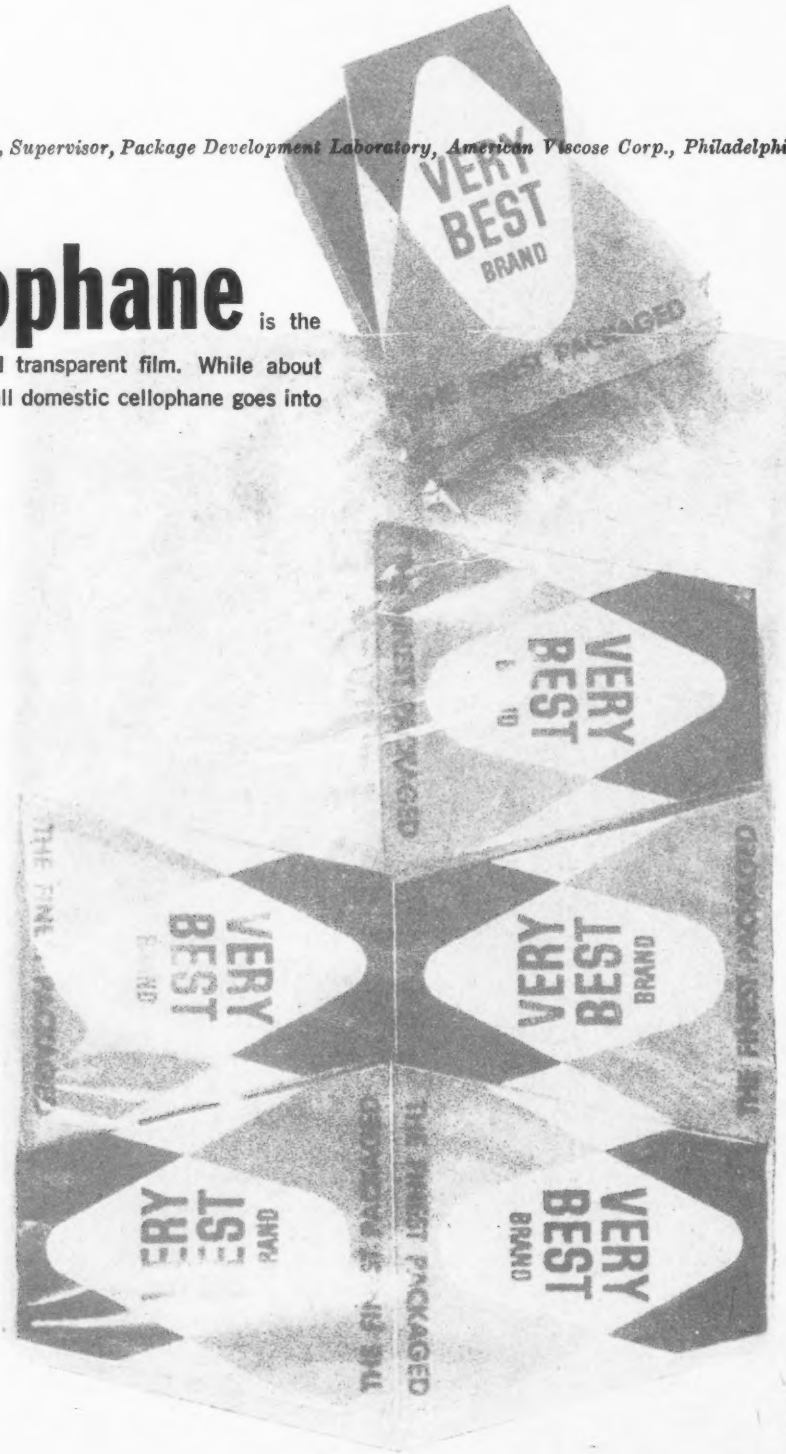
Silk screen craftsmen often have difficulty obtaining satisfactory transparent inks. The following procedure has been found to be successful for silk screen printing on foil in transparent colors: to Union Ink Company clear silk screen transparent lacquer, add General Analine methanol soluble dyes for coloring. The dyes should be mixed with methanol before being added to the clear lacquer. □ Printers, when ordering laminated foil stock for reproduction, should specify the printing method to be used and the end use, so the foil surface will be properly prepared for their particular requirements. ■



WHAT EVERY DESIGNER SHOULD KNOW ABOUT CELLOPHANE

By William C. Diesinger, Jr., Supervisor, Package Development Laboratory, American Viscose Corp., Philadelphia, Pa.

cellophane is the most widely used transparent film. While about three fourths of all domestic cellophane goes into



the packaging of foods, the remainder finds applications in the textile, drug, tobacco and other fields, as well as in fabricated items and for industrial purposes. Cellophane combines protective qualities, over-all economy with aesthetic and sales appeal.

VISIBILITY

The most important factor to the designer and to those he serves is that the package helps sell the product. Cellophane displays through its crystal clear transparency the self-selling features of many products. Food items, such as candies, pastries, cheeses, and nut meats with their intrinsic mouth-watering sales appeal, depend on visibility to induce impulse buying. ☐ On items such as fresh red meats and frozen meats, cellophane's transparency promotes sales in another way. The consumer wants to see the product to be assured of quality. ☐ Hosiery is packaged in die cut boxes or envelopes using cellophane as a means to display colors, shades, and sheerness. Cellophane reveals shades and colors without distortion. ☐ Such items as aspirin, cough drops, and shampoos, when bundled in cellophane in groups of five, six, ten, etc. may offer the distributive and storage operation advantages. Through clear film overwraps, instant identification and inventory control are possible. Six-sided visibility in the bundling application may eliminate the need for any printing on the overwrap.

SURFACE APPEARANCE

As an overwrap for baked foods, cigarettes, cereals, and candies, cellophane is selected because it offers a combination of protection and appearance. ☐ Designers can use bold designs and fancy and intricate patterns, as well as chromatic colors or unusual subdued combinations when printing on cellophane. It takes surface or reverse printing excellently. Where cellophane is used in laminations with other materials, printing can be sandwiched between the layers for permanent protection from scuffing. Cellophane prints by flexographic, roto-gravure and letterpress, gives truest possible reproduction to original artwork over a broad range of color and design. ☐ The smooth, static-free surfaces of cellophane films do not attract dust particles. This factor helps keep the package looking fresh and clean on the store shelf.

ADAPTABILITY AND CONVENIENCE

Cellophane's functional properties are utilized in such packaging applications as direct wraps, bags, envelopes, window cartons, overwraps, window bags, strip packaging and tear tapes. It is adaptable to such packaging concepts as multi-packs, bundling, variety packs, show case, billboard, and portion packs. ☐ For convenience and price appeal, two or more items are over-wrapped as a single unit in multi-packs to increase sales volume. Candy, cereals, cigars and soaps are prominent illustrations of cellophane's use in multiple packaging. New applications of multiple packaging are being tested and developed in previously unexplored areas. ☐ Cellophane-wrapped variety packs, a form of multiple packaging, offers the convenience of choice to the consumer, an avenue for introducing new products to the manufacturer. Also, popular products can be coupled with lesser known items. ☐ Shelf impact can be enhanced by spreading design and merchandising over two or more packages so that when grouped and over-

wrapped in cellophane, the packages take on a single billboard appearance. ☐ Attractively designed containers, without identification, are wrapped in printed cellophane which carries the merchandising message. When the printed wraps are removed, the show case containers, free of any sales pitch, may be displayed and used in the home. Salt shakers and tissue boxes are notable examples of the show case packaging idea. ☐ Cellophane lends itself to the convenience of portion packaging where individual servings are separately contained in sealed pouches or bags. For easy opening, cellophane tear tapes can be applied on portion packs as well as on cigarette, cigar and a variety of other packages.

PROTECTION

Most products rely on repeat sales. The package must not only suggest quality, but it must protect the product so it will live up to the consumers' expectations. ☐ Cellophane has its protective limitations. It is not recommended for heavy, bulky items subject to rough handling, or for those which require an indefinite shelf life. For powdery materials, such as dried milk, flour products, highly hygroscopic drug or chemical powders, it should not be used unless in combination with other materials. It is not suggested for very large windows in boxes or cartons. ☐ Important to the designer is the fact that cellophane can be tailored by coatings and laminations to serve a wide variety of protective functions. ☐ Water vapor transmission rates, gas permeability, and heat sealing properties are controlled by varying the type and formulation of coatings, and the plasticizer content of the film. Also, where cellophane is combined with other materials in laminated structures, additional properties can be obtained. The fact that cellophane can be made water-vapor proof and gas-proof in different degrees of permeability contributes to its range of applications. In general, gas permeability of dry, plasticized, uncoated, regenerated cellulose is less than that of most film-forming Polymers. Nitrocellulose coatings lessen the gas permeability of cellulose film, and polyvinylidene chloride coatings make it even more "gasproof." ☐ Cellophane's gasproofness, at one extreme, is utilized to prevent odors or aroma contamination of tea, butter and the like, or for retention of volatile flavors, as in chewing gum and soap. It is also used to prevent evaporation of deodorant cakes. In laminations with other films, the advantages of cellophane's gasproofness and its printability are utilized for vacuum packaging of luncheon meats and gas packaging of cheese. ☐ At the other end of the scale, in cellophane packaging of fresh produce, which continues respiration in the package, gas permeability is increased by small perforations or vent holes in the film. Such venting has an insignificant effect on water-vapor transmission rates.

SPECIAL TYPES

Water-vapor proofness can be utilized to keep moisture within a product or out of a product. Special types are available for low temperature application, for resistance to low humidity levels, and for water resistance necessary on wet products. Non-moisture proof types are made for wrapping applications where moisture protection is not necessary. ☐ All cellophane types can be either adhesive or solvent sealed. And cellophane can be made heat sealable by a variety of coatings. In

fact, most cellophanes today are coated and incorporate heat sealing characteristics in different degrees of strength.

HEAT SEALING

The heat sealing feature is of special importance in high speed packaging applications. Cellophane's heat sealing range offers considerable latitude; its sealing requirements are non-critical. Sealing ranges vary from approximately 200° to 300°F., although much higher temperatures are used where multiple folds are to be sealed on high speed equipment. In sealing cellophane by heat, three factors need to be considered: temperature, dwell time and pressure. Speed and tenacity of heat seals are again factors which can be controlled by coating formulations. ☐ Thickness or gauge of the base sheet is the principal factor in determining cellophane's strength. However, where exceptional strength is required, cellophane in laminations with other materials is available. Like many other of cellophane's properties, strength is a factor which can be built into a film to satisfy the package's requirements. ☐ Owing to its non-porous structure, cellophane is inherently grease-, dust-, bacteria-, and germ-proof. It is resistant to infestation by insects of the non-boring type. Its burning rate is similar to that of newsprint.

PROTECTION

All cellophane leaves the manufacturer with a moisture content which should be maintained, since it is the lifeblood of this flexible film. Manufacturers provide instructions for its correct storage, handling, and applications in order to insure optimum performance. ☐ In considering the protective properties of cellophane, the designer should keep in mind the film's versatility. Tailor-made protection can be achieved for particular product groups. Combining cellophane with other films, foils and papers in special laminations further extends the range of protective characteristics.

CONVERTING QUALITIES

Cellophane performs well on high speed machines. In fact, much of the automatic packaging equipment and many automatic and semi-automatic wrapping machines were originally designed to operate with cellophane. Cellophane is static free and not limp. There is less drag on heating units with cellophane than with most other heat sealing materials. ☐ Cellophane will convert easily. Highly flexible types are available for bag fabrication; special soft types for "twist" wrapping; others, with extra strong heat sealing properties are also available.

OVERWRAP

As an overwrap, cellophane adds strength to a package, often eliminating costly tuck and gluing operations in package construction. ☐ Cellophane is essentially a low cost, high yield film, but its over-all economy is also closely related to labor savings possible because of its trouble-free machine performance. ☐ In considering this transparent flexible film as a packaging material, the designer can look to manufacturers research and testing laboratories for technical information, and specific film recommendations as well as market development services to introduce and promote practicable ideas for better packaging. ■

By Austin Hare. Product Manager, Textiles-Bag Division, St. Regis Paper Company, New York 17, N. Y.

fabrics

It is conceivable that nearly every existing fabric is used in packaging, but only a few are used in any great quantity. ☐ In industrial packaging, the largest consumer of fabrics is the bag industry. Used here are burlap, cotton, open mesh (a material made of woven paper or cotton yarn) and laminated (WPPL), which is usually a combination of fabric and paper or polyethylene. ☐ In 1959, 508 million burlap, 348 million cotton, 65 million open mesh, and 33 million laminated (WPPL) bags were consumed in the United States alone. ☐ While burlap, cotton and open mesh bags have enjoyed a long period of usage, the development of the laminated (WPPL) bag is comparatively recent. Though our company manufactures all four types of bags, a considerable amount of time has been given to research and development of the WPPL bag. It is felt that the combinations of fabric, paper and plastic possible in this type of bag lend themselves to a variety of uses in packaging that cannot be fulfilled by any of the other types alone. ☐ Following is a brief discussion on the individual characteristics, and the advantages and disadvantages of their usage, of the four types of bags.

WPPL BAGS

Laminated (WPPL) bags are a recent development, that have opened the way for a new concept in industrial packaging in which many combinations of materials may be used depending on the properties needed by the packager. ☐ WPPL is the designation for "waterproof paperlined," though this term is now somewhat misleading in view of the fact that often plastic film is used as a substitute for paper. ☐ The WPPL bag is basically a combination, by lamination, of one or more layers of stretchable paper or plastic film with a textile, usually burlap. From 3 to 5 layers are common. As a rule, the textile provides the strength and the laminating materials and other layers provide special protective features. Sometimes the burlap is sandwiched between two layers of paper to offer a better printing surface and better appearing bag. The inner ply or plies, when made into a bag, can be made of specially treated papers or plastic films. The laminating agents used are asphalt, latex, resin or vegetable adhesives. The burlap can be as light in weight as 7½ oz. or in increased weights up to 14 oz. ☐ Many combinations and several plies can be combined to provide adequate protection for a given product. ☐ WPPL bags combine in one bag the best physical features of both cloth and multiwall bags. The cloth used in its construction makes it considerably stronger than a multiwall bag and it can be almost completely moistureproof depending on (1) the materials used, (2) the seam construction, and (3) the type of end closures. ☐ Its ruggedness helps withstand the rigors of high stacking storage as found in export shipments and multiple rough handling of both export and domestic shipments. ☐ Because of its moistureproofness this container can be "tailor made" to protect a product when (1) the retention of the initial moisture content is needed; (2) the product must be protected from moisture—such as hygroscopic materials; (3) protection from aroma and contamination is required; (4) protection against loss of aroma or loss of weight through sifting and exposure is paramount; and (5) protection against the hazards of undue exposure during transportation or long storage conditions.

BURLAP BAGS

Burlap is a coarse material woven from yarns of jute fiber grown in India and Pakistan. Although small amounts of burlap enter this country from Europe and Japan for specialty end uses, virtually all burlap for bag manufacturing purposes is imported from India and Pakistan (88 and 12 per cents, respectively). ☐ The width of the material is measured from selvage to selvage; the selvage being the edge of a woven fabric so formed during the weaving process to prevent raveling. ☐ The weight of burlap is arrived at in a different manner from almost any other textile. It is based on a lineal yard of cloth 40 inches wide. All 10 oz. burlap is the same material, but the only time a yard of it would weigh exactly 10 ounces is when the lineal yard is 40 inches wide. ☐ In referring to the construction of burlap, we are talking about the yarn count or the "porter and shot" count to a standard measure, which is very close to a square inch. The "porter" is the yarns running the length of the cloth or parallel to the selvage. The "shot" is the set of yarns running across the cloth, perpendicular to the selvage and, crossing the porter yarns. ☐ Basically, burlap in bag making is divided into heavyweight and lightweight classes. The count on the 10 oz. and 12 oz. heavyweights is 11 x 12 (11 porter yarns and 12 shot yarns to approximately a square inch. Lightweights such as 7 and 7½ oz. materials would count 9 x 9 or 9 x 8 porter and shot, respectively. ☐ All Indian standard burlap manufacturing mills are graded A, B, C, or D based on the past performance of the output of their material in quality of jute used, evenness of weave, straight selvage, compact bailing, etc. Most United States customers insist on A-B group mills for bag manufacturing. ☐ "Bright" burlap is a non-standard material made from cleaner and brighter jute usually grown in the uplands of India and Pakistan. As it represents only a small percentage of the total production, there is sufficient demand to require paying a premium price for this material. As a result, there is an upcharge when this material is used in the manufacture of bags. ☐ Burlap arrives at U. S. ports in compressed bales usually containing 2,000 yards and weighing approximately 1,000 lbs., depending on the weight of the material. Twenty bolts measuring 100 yards make up a bale. When the bale arrives at the bag manufacturing plant, it is opened and the bolts are folded in such a manner that the ends of the bolts can be sewn together and the material can then be put up on large rolls. ☐ Advantages of a burlap bag include: 1. Porosity of cloth — many bagged products must breathe. ☐ 2. Resistance to tear. Even after being handled by hooks only minor damage is done if any at all. ☐ 3. Reuseability. Bag can be turned inside out and be reprinted if necessary. ☐ 4. Durability. Average bag can be used 3 to 5 times. Can be mended. ☐ 5. Strength. ☐ 6. Stacking and handling qualities. A filled burlap bag handles easily. ☐ 7. Does not deteriorate rapidly when exposed to weather. ☐ 8. Convenience. Can be filled in the field. Small operations can wire-tie or hand-sew without investing in equipment. ☐ 9. Users can buy in small quantities. Upcharge very slight. ☐ 10. Traditional world-wide usage. ☐ Disadvantages include: 1. Sifting. Especially through side seams. ☐ 2. Appearance. Not uniform. ☐ 3. Comparatively poor printing service. ☐ 4. Poor resistance to insect and rodent infestation. ☐ 5. Non-

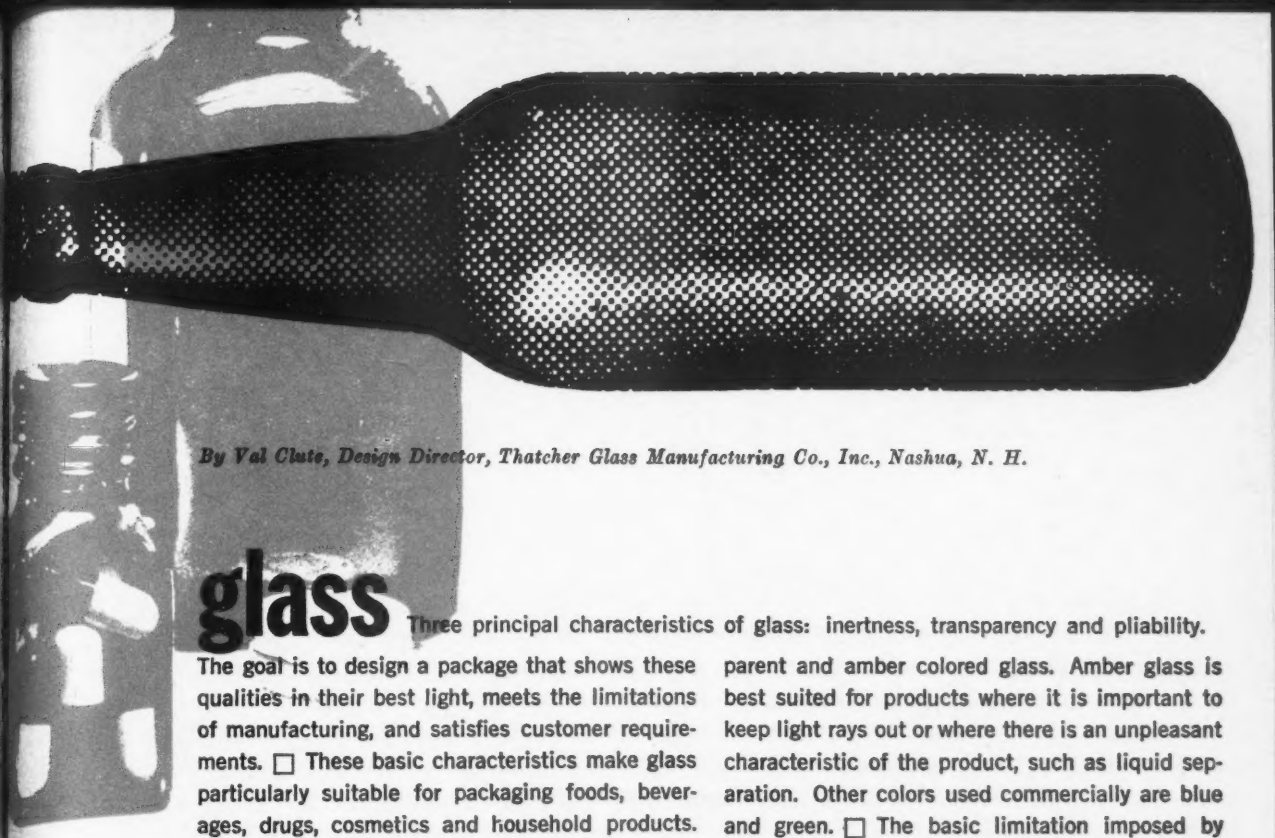
conformity of cloth in color, weave, etc. □ 6. Sometimes sharp price fluctuation. □ 7. Imported material.

COTTON BAGS

Although a cotton bag is basically made in the same manner as a burlap bag, its description in regard to width and weight is entirely different. □ Here when we refer to a 40" 3.75 yard cloth we mean that at 40" in width 3.75 lineal yards (3.75 x 36)" will weigh one pound. Another example would be 40" 2.85 yard cloth. This means that 2.85 yards of this particular cloth, providing it is 40" wide, will weigh one pound. □ It can be readily understood that the cloth in the second example is heavier than that of the first example as it only took 2.85 yards to make a pound, whereas the cloth in the first example required 3.75 yards to weigh one pound. A more complete description of cotton cloth includes the "count" or number of yarns found in a square inch of the cloth mentioned. For instance: the count of 48 x 48 means that in one inch there are 48 yarns in the "warp" which is the set of yarns running the length of the material and in one inch there are 48 yarns in the "filling" which runs the width of the material. Example: 36" 48 x 48 2.85 yard cloth. This would describe a material which is 36" wide and 2.85 yards of it will weigh one pound. We are also told that there are 48 yarns to the inch in the warp (length of the cloth) and 48 yarns to the inch in the filling (width of the cloth). □ United States consumption of bags made from cotton goods has decreased steadily from 667 million bags in 1950 to 320 million in 1953. Due to large exports of flour to many foreign aid nations a small increase to 348 million bags was reported last year.

OPEN MESH BAGS

Over 90% of the material from which open mesh bags are made is paper. The balance is a woven cotton yarn material and its end use is mostly confined to small "consumer size" bags, the consumption of which is steadily decreasing. □ The paper material used is first put up in rolls made of specially treated "twisting kraft." These rolls are then slit into ribbons ⅜" to ½" wide. The ribbons are then twisted and dyed in various colors and sometimes further treated for water repellency, to form a yarn. The yarns are woven on a loom so as to make a loosely woven fabric. □ Although there are a few other interesting end uses, almost all mesh material ends up in bags to contain produce. Treatment for water repellency is used for produce which requires "topped ice" dressing while in transit, such as carrots and cabbage. Potatoes and onions are examples of commodities which are shipped dry. □ The various color dyes mentioned above are important in the merchandising of the particular commodity to be bagged. The main reason for the success of this open mesh material bag is that it allows the produce contained to be clearly seen by the dealer, wholesaler, retailer, or consumer. For obvious reasons this is a "must" in the produce handling business. Certain colors in open mesh bags enhance the appearance of certain vegetables or fruits. Cabbages, for instance, will sell better in a green bag more than any other color. The small white onion will sell very well in a white onion bag but will not move in a red onion bag which is the popular container for onions other than the white onion and so on. ■



By Val Clute, Design Director, Thatcher Glass Manufacturing Co., Inc., Nashua, N. H.

glass

Three principal characteristics of glass: inertness, transparency and pliability. The goal is to design a package that shows these qualities in their best light, meets the limitations of manufacturing, and satisfies customer requirements. ☐ These basic characteristics make glass particularly suitable for packaging foods, beverages, drugs, cosmetics and household products. For example, 41% of all glass containers manufactured are produced for food products, 26% for beverages. ☐ Here is a brief examination of these three properties: 1. INERTNESS—Glass, with few exceptions, will not be affected by the product it holds nor will the product be affected by glass. This means that foods will retain their flavor and that foreign materials will be kept out. ☐ 2. TRANSPARENCY—Glass shows what the contained product looks like. This gives consumers a chance to see what they are buying and lets them know when they run low on the contents. Showing the product offers an attractive method of display. In today's age of giant supermarkets, the visibility of the product can be important in competing for the housewife's dollar. ☐ 3. PLIABILITY—Glass can be blown or pressed into a variety of shapes and sizes to aesthetically appeal to the consumer's taste; from the small graceful cosmetic bottle with its feminine appeal, to the masculine appeal.

WHEN TO USE AMBER GLASS

The techniques of making and handling glass have been improved over the years so that lighter and stronger packages can be produced at faster rates than before—hence more economically. ☐ In packaging, basically, one type of glass is used; soda-lime, which best exhibits the properties mentioned above. At our company, two colors: transparent and amber colored glass. Amber glass is best suited for products where it is important to keep light rays out or where there is an unpleasant characteristic of the product, such as liquid separation. Other colors used commercially are blue and green. ☐ The basic limitation imposed by manufacturing necessitates working with a two-part mold (although there are several cases where we have worked with three and even four-part molds). ☐ It is also necessary that the design offer even distribution of glass.

CHECK LIST GLASS DESIGN

The real limitations on the design, however, come from the packer, not the manufacturer. Here are the customer's specifications to be considered in designing glass containers: Capacity ☐ Height ☐ Diameter ☐ Finish and closure ☐ Weight ☐ Headspace ☐ Nature of contents ☐ Label and location ☐ Purpose of design (re-usability, shelf life, etc.) ☐ Pricing ☐ Merchandising ☐ Competitive products. ☐ Often new designs do not differ considerably from previous packages. Consumer acceptance, competitive products, and the packers changeover cost are good reasons for this restriction to radical change. ☐ However, we are free to sometimes produce a radical departure in glass container design. An example of this is the Christmas decanter created for American Distilling Company. American Distilling's desire for a different kind of package offered a chance to exert more creativity than usual. The approach was directed to a sculptured free-form design. The result: a simple, graceful, clear glass container economical to produce and fill.■

WHAT EVERY DESIGNER SHOULD KNOW ABOUT METAL

By L. G. Canella, Product Sales Manager, Continental Can Company, New York, N. Y.

metal is rigid, durable, unbreakable and economical. It is immune to the effects of light, air and moisture. It lends itself to the high-speed manufacturing, filling and closing processes that mass production demands and to rigors of shipping and handling. Properly inside lined with one of the many available enamels, metal can hold all but the most corrosive products.

Metal meets all the basic requirements of modern package design. It contains and protects products well. It can be combined with other materials for convenient dispensing arrangements, and with a well-designed lithographed design on a paper label it looks attractive at the point of sale.

STEEL OR ALUMINUM

The designer who decides on a metal package may have a choice between steel and aluminum as his basic material. Steel dominates the field for processed foods, household and commercial products because it can be produced at lower cost. Aluminum is more pliable—it can more readily be made into an assortment of sizes and shapes—but it also costs more. Its lightness and noncorrosive quality have made it popular for such products as motor oil, where transportation costs loom large, and for cosmetics, which depend to a great degree on package appearance for their sales. □ A steel container may be made of uncoated steel, known as blackplate, of tinplate (steel with a thin tin coating), or terneplate, lead-coated steel, well suited for such products as shellac. Or it may be enamel lined inside with any of dozens of enamels. The choice depends primarily on the chemical composition of the product to be packaged and its reaction to metal. Ideally, a designer should understand the chemistry of metal and the product to be packed, just as he should understand container manufacturing processes, but the technical research in these areas fall mainly within the province of other specialists. A wise designer will always consult them. □ The processed food can accounts for more than half the metal containers produced each year. To the layman, this can appears to have changed little in the past half century, mainly because it seems to be ideally suited to its purpose. Its cylindrical shape uses a minimum of material, holds pressure, and is easy to manufacture, fill, handle and label at high speeds. This can is known as the packer's or open-top can. But many more choices face the designer when he deals with household products, drugs and other non-food products to be packaged in metal containers.

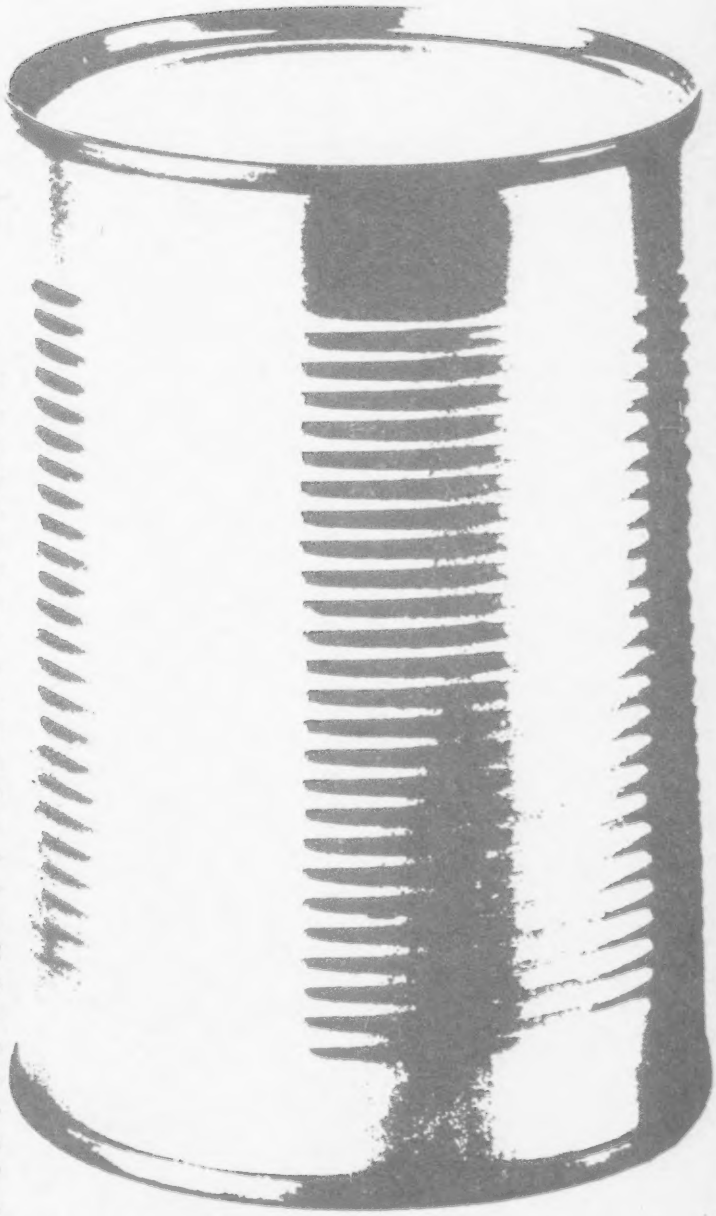
METAL CAN DEVELOPMENTS

The story of an insecticide illustrates the possibilities. This product originally came in a container known as a harness-oil can, a cylindrical can with a metal cone top and metal screw cap. It could be easily poured into a spray gun for dispensing and the screw top permitted convenient opening and reclosure. Subsequent developments led to packing it in an oblong can similar to those used for turpentine. This type of container, though slightly more expensive than the dome-top can, offers more favorable display opportunities on the retail shelf. More recently, the invention of the aerosol can suggested another change in packaging so that the insecticide could be dispensed directly from its container. However, one packer of insecticides still uses the cone top can, but sup-

plies a special dispensing pump with each unit of the product. He claims that liquid insecticide gives the consumer more for the money. But packers who favor the aerosol can claim that the effective dispensing mechanism provides more effective and more economical use of the product.

COMBINING WITH OTHER MATERIALS

Frequently, a designer must think in terms of combining metal with another material to make the best package from a sales and convenience viewpoint. The popularity of detergents, for example, led to a need for a container that could hold and dispense them with maximum efficiency. A nozzle on top of the can seemed to be the answer, and since the liquid detergent had a corrosive effect on metal nozzles, plastic nozzles were tried and turned out to solve the problem completely. □ The plastic "flip cap," which has a captive-cap closure in addition to its dispensing feature, offers still another advantage. Because it eliminates the use of solder, the top of the can may be lithographed to give the container a more attractive appearance. The captive cap prevents substitution of prices stamped on caps. □ Conversely, metal may be used for the ends of a container made of another material. For years, the makers of a ready-to-bake biscuit have packed it in a scored paper cylinder with metal ends. The metal ends add strength to the container, while the paper sides may be unwound to remove the biscuits from the package. □ Possible reuse of the package is another consideration for the designer working with metal. Because of metals durability, it lends itself to containers that offer reuse after the original product has been removed.



Some containers are specifically designed with re-use in mind; the washing-machine detergent that comes in a metal pail and the motor oil for farm use in a large kerosene can are examples.

SHAPES AND SIZES

The important question of shape and size also arises. The first seamless ointment box made news in 1880. The small hinged snap cover box for headache tablets not only protects its contents but is easy to carry around, and easily opened. Bandages come in boxes that have hinged or sliding tops so that the boxes can be opened quickly and closed tightly; their oblong shape adapts them to convenient storage in the medicine chest.

CLOSURES

Like shape and size, closure has important proportions for the designer. The key-opening on coffee cans was a great innovation when it first hit the market. But once people got used to the idea, they expected perfection and began to complain about the difficulties of keeping the key on the track. So an inventive designer figured out the "grip strip," which keeps the key where it belongs and keeps the consumer happy. Some of the newer space jars feature a screw-on metal lid under which rests a removable plastic or metal shaker top for handy dispensing. Similarly, grated cheese comes in a jar which has a perforated metal screw-on top set over a solid piece of metal. The solid piece may be removed to permit sprinkling the cheese and replaced for storing it. Each product has its own requirements. It is the designer who has imagination that discovers ways to deal with these requirements.

DESIGN AND PRINTING

It is assumed, of course, that the designer keeps graphic design upper-most in his mind, whether he works with metal or anything else. He has to try to make his package so attractive that it will be picked from the shelf in preference to all its inviting competitors. Therefore, the use he makes of the container surface for displaying the product's advantages is of primary importance. A metal container presents the same problems as any other container in this area: problems of composition, color, lettering, decorations. But metal has a few special problems of its own. For example, a can with cemented side seams may be successfully lithographed all the way around, whereas a can with outside soldered side seams may not. A consideration of this kind might be important enough in some cases to warrant the use of cement instead of solder. Although the packer's food can could be lithographed, economics and technical limitations of inks still suggest using paper labels. To accommodate various distributors, most food packers have reason to use many different labels on the same product. The same practice applies for paint cans to identify the various colors. □ Lithography prevails for other metal-packed products, however. Lithography will not deteriorate as a result of handling, heat, cold, or moisture, and it presents opportunity for eye-catching display. Metal may be printed in much the same manner as paper with the same color range. The designer can take advantage of its glossy surface, if he wishes, by using transparent ink on part of the container and letting the shine of the metal show through. In other words, the material offers him as much flexibility as he needs to do his job well. ■

By A. M. Kaiser, Manager, Packaging Dept., West Virginia Pulp and Paper Company, New York, N. Y.

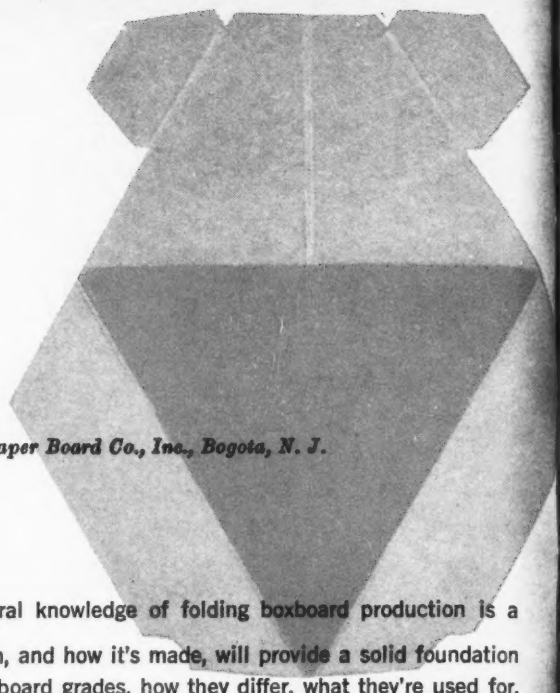
paper is the most widely used packaging material today. There are, of course, many more types of paper and combinations. Those described in this article are among the most widely used by packaging designers.

KRAFT PACKAGING PAPER ranges in basis weights from 18 pounds (24 x 36—500) for tissue grades to 250 pounds for regular grades. (Basis weight is the weight of 500 sheets (one ream) in sheet size 24 x 36 inches). It is made by the sulphate process from long fibered woods and has good tearing, bending and other strength producing qualities. The word "kraft" is Swedish, meaning strong, and kraft paper is a working paper expected to exceed the strength requirements of its applications. It is normally brown in color but can be bleached to a bright white and all intermediate shades. It can be rough or very smooth and can be printed by all processes. ☐ Its primary packaging uses are bag materials, liners and wrappers. The largest single use is for multiwall shipping sacks. This requires a paper of maximum strength, durability and flexibility, and the tensile, tearing and stretching specifications are rigid. ☐ In 1958, our company introduced a kraft paper with controlled stretch of up to 15% in the machine direction called **Clupak Extensible** paper. It is not a crepe paper and is smooth surfaced with a soft feel and greater pliability than regular kraft paper. Its controlled stretch allows "giving" under stress. ☐ Extensible kraft paper can be coated, impregnated, laminated and printed. Its greater toughness allows lighter basis weights for fewer plies. Its pliability allows better conformation of lead, resulting in less slippage and the ability to stack more bags in a given height. Production of isotropic or all-way stretch extensible papers appears possible in the near future. ☐ The yearly tonnage of KRAFT WRAPPING PAPER is more than 50% of all wrapping papers combined. Uses range from tissue wrappers for jewelry and light articles, through light and medium weights for wrapping carry-out and mailable packages, to heavy weights for wrapping express and freight shipments. Heavy kraft wrapping is also used for car liners and furniture packaging. It is manufactured in unbleached, semi-bleached and bleached forms, and in a complete range of colors and shades. ☐ Standard colors are white, black, red, green, orange, blue and gray, with distinctive water marks and designs available on special order. It is made in two basic surfaces, machine finish and machine glazed. The latter has a shiny surface on one side, used by drug stores, florists, department stores and similar establishments. ☐ Kraft wrapping paper is supplied in three qualities—standard, with bursting strength of 70-85% of its weight; #1 with burst of 85-96% of its basis weight; and superstandard, with burst of 96% of its basis weight. The standard grade accounts for about 90% of the total manufactured. ☐ Kraft wrapping papers can be waterproofed or made resistant to water vapor transmission by laminating, coating and impregnating. The most common laminants are asphalt, micro-crystalline waxes, thermoplastic resins and latices. The latter two are more expensive and are used where any bleeding of the asphalt could damage the package contents or where asphalt odor would be objectionable. ☐ Coatings are asphalt, asphalt wax combinations, polyethylene or other filmed plastics and waterproof resins. Impregnants are latices, resins and waxes. Water resistant kraft papers also come decorated or imprinted. ☐ For heavy pack-

aging, kraft paper may be reinforced with glass fibre, rayon, jute or sisal fibres, and can be laminated usually with asphalt, to inexpensive fabrics like burlap, osnaburg, cotton or jute scrim or other similar materials. ☐ Crepe paper for packaging is usually medium weight kraft, which may be waterproofed by any of the above methods before creping. Stretch of up to 50% may be imparted, but 15-20% is most common. Crepe paper has high resistance to puncture and tearing, and is more pliable with better moldability than regular paper. It is also more expensive. ☐ POUCH PAPER is an opaque, highly refined, plasticized paper made from virgin kraft pulp. It is usually bleached, and super-calendered for high smoothness. The refining is not, however, sufficient to render the sheet homogeneous, and it has no grease-proof qualities. Stronger and purer than most packaging papers, it can be printed by all processes. It is chiefly used in combination with films or foils to form pouch style packages on automatic machinery. Its function is to provide strength at low cost, in the fields of dry or dehydrated foods, tobacco, detergents, pharmaceuticals and chemicals. ☐ GLASSINE AND GREASEPROOF PAPERS are so similar that the grades are sometimes considered interchangeable. This, however, is incorrect, though they are made on the paper machine by the same process. Greaseproof is the machine finished version, being calendered between steel rolls only enough to give it sufficient smoothness. Glassine is the same paper run through a super-calender to render it extra smooth, glossy and usually transparent. However, opaque and translucent glassines are available. Both are made on paper machines of special design, and their distinguishing qualities of oil and grease resistance are imparted by fibre treatment and paper formulation rather than by coating, laminating or other conversion treatment. Both are versatile and adaptable. They can be coated, laminated, printed, lacquered and otherwise converted. They work well on modern packaging machinery because of their comparative stiffness, but can be plasticized to correct for any surplus of this quality. They can be made heat sealable by coating with various plastic materials and their resistance to water vapor is increased by coating or laminating with waxes, resins or films. Almost 90% of the production of glassine and greaseproof is used in food packaging, as wrappers, liners, inner liners, bags and bag liners, envelopes and similar containers. ☐ Typical applications are the packaging of candy bars, cereals, cookies and crackers, cake mixes, pharmaceuticals, hospital supplies, meats, frozen foods, industrial packaging—products having critical flavor, low WVTR grease or oil retention and sterile protection problems. Because of its grease resistance, greaseproof is used in packaging ham, bacon, sausage, butter, oleo, lard, and other high fat content foods. It also provides a good odor barrier for the packaging of coffee. ☐ Because greaseproof is easily laminated to paperboard, the combination is used in making trays and boxes for bakery and meat products. ☐ Glassine is more non-absorbent and smoother than greaseproof, and is a more level laminating base. By the addition of fillers it can be made opaque. Colored and opaque glassines are naturally more resistant to light rays and this property is useful in preventing rancidity of fatty products. ☐ Though resistant to oils and greases, both papers have high MVT rates. To make them water vapor resistant, they can be wax laminated to themselves and other types of laminants applied by hot melt or solvent applications. As with other papers, wet strength must be developed by incorporation of the usual

melamine or urea resins in the paper furnish. ☐ Glassine combines perfectly with films and foils, and can be coated with paraffin waxes and solvent applied coatings such as cellulose nitrate and vinyl polymers. ☐ Both glassine and greaseproof can be made at the various pH levels. When neutral they are used as non-corrosive wrappings. ☐ Glassine and greaseproof are manufactured in 20 to 50# basis weight per 24 x 36—500 ream. ☐ VEGETABLE PARCHMENT is a translucent, non-absorbent, water and oil resistant paper with high dry and wet bursting strength. It is made by passing an unsized sheet of well-formed sulphite and/or sulphate paper through a bath of sulphuric acid. This gelatinizes the outer surface of the fibers, with much the same effect as prolonged beating. The paper is then thoroughly washed with water to remove the acid. The sheet is very dense and completely homogeneous, to the extent it can be boiled without defibering. It is available with or without super calendering, the latter operation increasing the transparency. It can be embossed and decorated during manufacture. It is unsized, and can be waxed or coated, for water vapor proofing and heat sealing. It is non-toxic, tasteless and odorless, and is used for butter, margarine, meat, fish and most food wraps, liners for fruit and vegetable crates, and wrappers for oiled metal parts. It can be printed offset or letterpress with special inks, and is available in basis weights of 18 to 110 lbs., 24 x 36—500. The three standard weights are 27, 35, and 45#. PH range is 5.5 to 7.0, but this can be varied by alkali treatment after parchmentizing. ☐ The term TISSUE PAPER is applied to a variety of thin, light-weight papers in basis weights of less than 18 lbs. (24 x 36—480.) WRAPPING TISSUE is the term applied to tissues made for this purpose as distinguished from facial, napkin, sanitary and other uses. ☐ Wrapping tissues are made from rag, chemical wood pulp, mechanical wood pulp, rope fibers, or screenings. They may be machine finished or machine glazed, white, unbleached or colored. ☐ White tissue is used for wrapping and cushioning a number of products, from delicate lingerie and hosiery to gift wrapping and flowers. Pink and blue colored tissues emphasize the whiteness of white cotton and linen articles and are used extensively by laundries, manufacturers and retailers in wrapping these goods. Shoe manufacturers use all colors of tissue in shoe wrapping, while florists use green tissue, waxed and unwaxed, for floral packaging. Decorated tissues for seasonal, special occasion and everyday wrapping are available in stock and special order designs. ☐ LABEL PAPERS are usually coated one side book papers, the coating pigment being all clay or mixtures of clay and other white pigments. For letterpress work the adhesive is starch or starch and latex, while for lithography it is casein or casein-latex mixtures. The coated side is supercalendered to a high finish while the uncoated side is left rough for pasting. ☐ These papers are made in various grades, from bleached sulphite and/or sulphate pulps. Some mechanical pulp is used in the less expensive lines. ☐ Many labels are varnished, lacquered or printed with metallic inks, and the ability to "hold out" these coatings and provide a high gloss, unmottled surface is accomplished by adjustment of the base sheet and the coating mixture. A small percentage of label paper is uncoated, and is known as litholabel. ☐ The principal use is labels for cans, bottles, jars, and other containers. An increasing amount of this type paper is laminated to paperboard of various kinds to form decorative boxes for hosiery, jewelry and many other products. ■

WHAT EVERY DESIGNER SHOULD KNOW ABOUT PAPERBOARD



By Ernest A. Bortis and Walter F. Nolan, Federal Paper Board Co., Inc., Bogota, N. J.

paperboard A general knowledge of folding boxboard production is a must for the designer. What board is made from, and how it's made, will provide a solid foundation for subsequent description of the various major board grades, how they differ, what they're used for, and how they may be modified or combined with other materials to serve specific purposes.

The major raw materials of folding boxboard are: wood pulp or reclaimed pulp fibres (waste paper) or combinations of both, with a variety of specialized chemicals, and very large quantities of water. Wood pulp is produced by several means, including a mechanical pulping process, whereby the bark is first stripped off and then the wood log is ground against a grindstone of a particular coarseness to determine the type of ground wood designed. A chemical process cooks the wood, reducing it to pulp fibers, and dissolving the sap. □ In the sulphite chemical process, acid is used as the dissolving agent, while alkali is employed in the sulphate or kraft process. For southern pine woods, containing large amounts of pitch, the alkali process is employed. This is because of difficulties in dissolving the pitch with acid. In either chemical process, chlorine gas or bleaching powder is introduced to purify the fibers and to whiten the pulp. Thus we obtain such products as "bleached sulphites" and "bleached sulphates."

THE MANUFACTURING PROCESS

Manufacturing paperboard is often compared to a laundering process, whereby the materials are beaten and scrubbed, wrung out, dried and ironed. The paperboard machine involved is large and expensive, and requires a great deal of space.

MAJOR GRADES OF FOLDING BOXBOARD

The major grades of folding boxboard are those listed and discussed below. While there are many variations or modifications of these basic grades, all of them substantially fit into one or the other of these general categories. Some of these special characteristics and new developments will be discussed in a final section. However, let's start with the fundamentals first.

BENDING CHIP BOARD

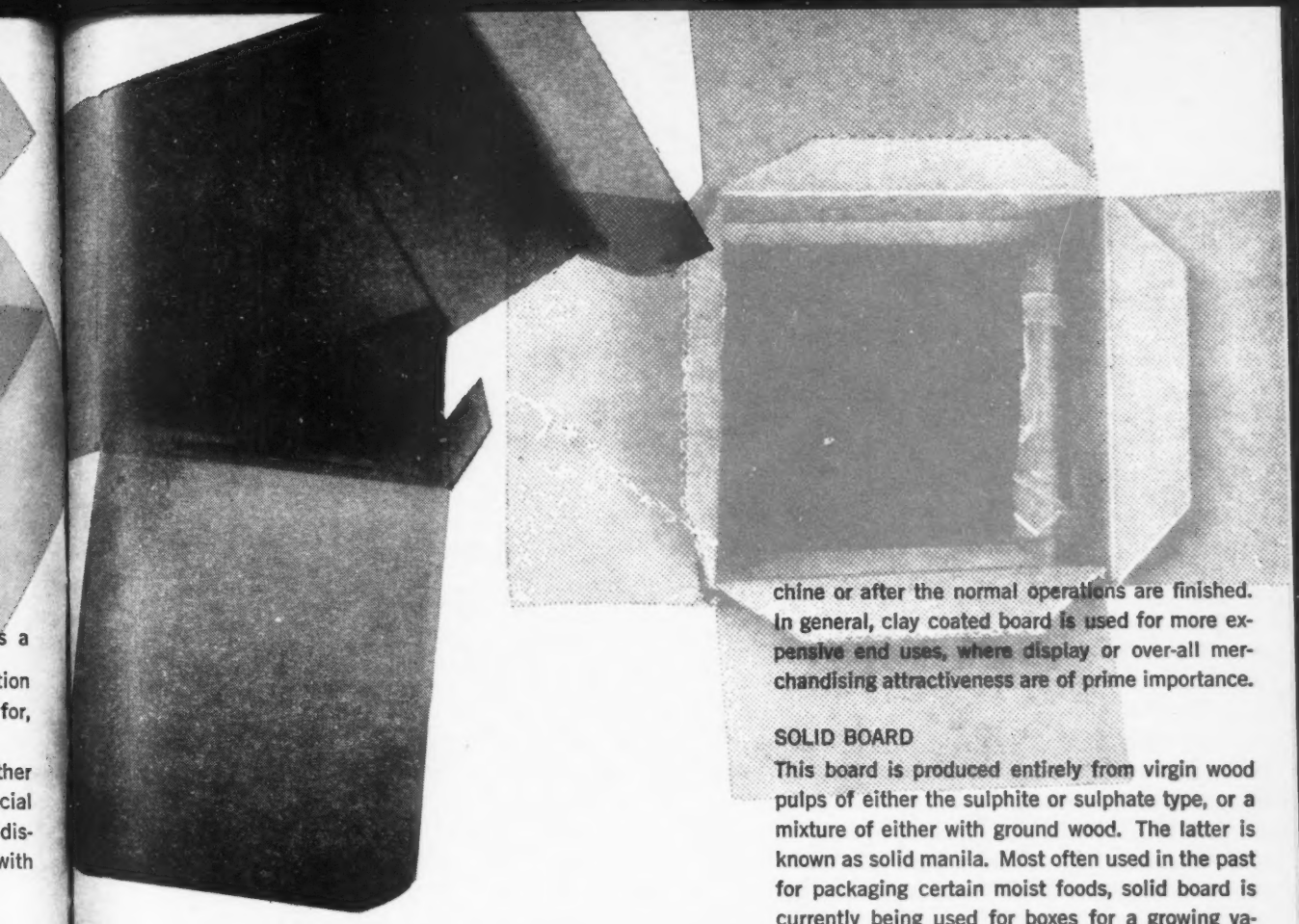
Most familiar because of its dark grey color, bending chip is produced from reclaimed mixed papers, combined with sulphate wood pulp to provide the necessary bendability. Bending chip is not normally suitable for multicolored printing and is most frequently used for the inner portion of a box not immediately seen by the consumer. It is also used in the construction of boxes for very inexpensive items, or as a temporary carrier, where fine quality printing is unnecessary. Laundry boxes, or product stiffeners, like shirt-boards, are often made from bending chip.

BENDING NEWS BOARD

Like bending chip, bending news board does not lend itself to multicolor printing. It is made from reclaimed newspapers, with either sulphate or sulphite wood pulp added to provide the necessary bendability.

SINGLE MANILA-LINED BOARD

Folding boxboards are normally composed of two or three kinds of material, or layers, combined into a single web on the paperboard machine. In single manila-lined board, the top liner, which becomes the outer printing surface of the box, is



produced from unbleached sulphite and sulphate and ground wood pulp. It is a distinctive light buff color. The remainder of the board, the middle and bottom sections, are produced from news or mixed papers.

BLEACHED MANILA-LINED BOARD

This grade is made from roughly the same basic ingredients as single manila-lined board, but it's top liner is white in color. For this reason bleached manila-lined board is widely used for a variety of folding boxes.

WHITE PATENT COATED BOARD

This grade is made with a top liner of bleached sulphite wood pulp mixed with white shavings, aspen, or soda pulp. It is characterized by an excellent white surface for multicolor printing for medium-priced large usage items like cereal boxes.

CLAY COATED BOARD

Here is a grade of exceptional surface characteristics for high quality printing. The top liner may be coated with a mixture of white mineral powder, organic binder and water. Clay coating may be accomplished either on the paperboard machine or after the normal operations are finished. In general, clay coated board is used for more expensive end uses, where display or over-all merchandising attractiveness are of prime importance.

SOLID BOARD

This board is produced entirely from virgin wood pulps of either the sulphite or sulphate type, or a mixture of either with ground wood. The latter is known as solid manila. Most often used in the past for packaging certain moist foods, solid board is currently being used for boxes for a growing variety of other types of products.

SIZES AND DEFINITIONS

The familiarity with certain standard measurements and phraseology in the folding boxboard industry would be helpful to the designer. A standard sheet size is 25" x 40", constituting an area of 1,000 sq. inches, and is used as the basis for estimating weight, on all grades of folding boxboard. Sheet dimensions are always stated with the dimension across the grain of the board given first, followed by the dimension with the grain. "Grain" is the machine direction or the long way of the majority of the fibers as formed on the cylinder board machine. □ Sheet thickness, or caliper, is always measured in 1,000ths of an inch, each thousandth being referred to as a "point." Thus a board of 0.016-inch thickness is referred to as 16-point board and a 12-point board is 0.012-inch in thickness. □ Sheet finish is of four standard degrees of smoothness, numbered 1 to 4, with the larger numbers indicating greater smoothness. As discussed earlier, the smoothness of a sheet is determined by the pressure of the calender rolls. □ A bundle of folding boxboard weighs 50 lbs. This weight is standard. The number of sheets of

any given caliper contained in a 50 lb. bundle will vary not only because of sheet size, but because of the differences in weights of board of the same size, owing to the varying finishes. The number of sheets of the standard 25 x 40 inch size in a bundle is referred to as the "regular number." The number of sheets in any other size is referred to as the "count." Folding boxboard is not always shipped in bundles. Frequently it is packed on wooden skids, strapped with metal bands, or wound on huge rolls.

FRESH DEVELOPMENTS

In recent years, through broad industry research and development programs, many improvements and modifications of traditional boards have developed. These developments fall into two general areas; decorative and functional. In some cases these tend to overlap or complement each other.

DECORATIVE

Wax casting, wherein an ultra smooth glossy wax coating enhances taste and aesthetic appeal of a printed product picture, has complemented the lithographic printing process and has made the major contribution in the frozen food carton area. ☐ Major advances in the smoothness and hold-out characteristics of paperboard have enabled lacquers and finishes to give not only gloss and smoothness, but side effects of abrasion resistance, protective barriers, and other specialized areas of protection. The board improvement has likewise resulted in major printing reproduction advances, wherein specially treated board is tailored for each process to a great degree for each customer's package. ☐ Plastic extrusions have given board the smoothness, durability, feel appeal, printability and glueability of plastic containers. The side attraction of excellent barrier properties, whether of a wet, gas, or grease nature, cover the gamut of packaging desires. ☐ Lamination of specialty papers, such as metallized or specialty coated, to paperboard, contributes an improvement to the base board not otherwise available for decorative effects. ☐ Each of these materials is not confined to a single method of application. Coatings, finishes, laminations, and printing involve a choice of applicators to achieve that special effect which will make a customer's package stand out from that of competition. This choice is not only true in the decorative, but also in the protective or functional field.

FUNCTIONAL

The waxed carton, perhaps the forerunner in the protective barrier field, is still with us, but now in many varied forms. As the frozen food industry has grown, the waxed carton field has led the way by providing individual protective means to each product. These products run through a seven course meal. ☐ Lacquer and plastic coatings are performing dual functions of protection and decoration. ☐ The overwrapping of food cartons is now being superseded by preapplied thermoplastics, which eliminate glue, and provide tight cartons. ☐ The cosmolined rifle is now a thing of the past, due to packages which repel moisture. This blessed event to our new soldiers has extended into all phases of ferrous metal packaging, and even now, new package impregnations are available for non-ferrous products. ☐ Generally, anything other than some liquids can now be correctly packaged in a carton. And soon, liquids too, may be cartonable. ☐ Developments in folding boxboard are ever-changing. Continued alertness and study is advised to keep abreast of these changes. ■

By Lawrence Dowd, Asst. Group Leader, U. S. Industrial Chemicals Co., New York, N. Y.

polyethylene

Ten years ago packaging materials were confined largely to the cellulose family—wood, paper, paperboard and cellulose film being the major items. Several thermoplastic materials, including polyethylene, were around. However, plastic films and containers were expensive, difficult to print and seal and, by today's standards, generally unattractive.

The rapid development of polyethylene for packaging closely parallels the growth and development of packaging techniques and equipment. ☐ Machinery manufacturers have developed cost-cutting machinery. Converters have arrived at more economical methods of producing polyethylene film, sheet, molded items and coatings. ☐ Resin manufacturers have developed manufacturing techniques that drastically reduced raw material cost, and, at the same time, produced a variety of new resins with properties designed and controlled for specific end-use requirements. ☐ The result: the package designer now can create concepts in packaging that were unheard-of less than a decade ago. Still, because of the relative newness of polyethylene, there are many misconceptions and lack of knowledge as to polyethylene's potential. A thorough knowledge of the variety of properties and combinations of properties available in polyethylene packaging materials will help the package designer evaluate its use in a specific application. ☐ There are a number of areas in which polyethylene is firmly established. A review of these areas and the properties of polyethylene that make it particularly well suited in each case should help stimulate the imagination of the package designer in the direction of his own needs. ☐ The areas to be reviewed include: 1. Unsupported film ■ 2. Coatings and laminations ■ 3. Rigid and semi-rigid containers ■ 4. Separate linings ■ 5. Sheet Material (thermoformed into blisters, bubbles, etc.)

UNSUPPORTED FILM

As unsupported film from 0.25 to 10.0 mils thick, polyethylene is often used as a complete package in itself. By proper choice of resin type and converting method, such properties as clarity, gloss, stiffness, strength, and slip can be varied over a wide range. Resin manufacturers and converters can be an aid to the package designer in selecting a film that best suits his end requirements. ☐ Table I lists the major uses for unsupported film, indicating the advantages of polyethylene in each application.

Major Advantages of Polyethylene Packaging Film

Polyethylene Film for:	Major Advantages
produce	low cost, strength, transparency
soft goods	clarity, gloss, varying degrees of stiffness
frozen foods	strengths and flexibility at low temperatures
bakery goods	clarity, gloss, protects against moisture loss
chemicals	strength, non-reactive nature, non-sticking
carton overwrap	clarity, gloss, low cost
bulk goods	low cost, strength, heat sealability, transparency

For each application listed in Table I, roll stock or pre-formed bags and pouches are available. Heat sealing equipment for continuous low cost operation can be obtained. In cases where volume does not justify an investment in automatic sealing equipment, inexpensive, manually operated sealers are available. ☐ Printing on polyethylene film in

four colors is common, and six color printing is available.

COATINGS AND LAMINATIONS

The uses of polyethylene in combination with other materials, either as a coating or lamination, are virtually unlimited. Almost any film, paper, foil, metal or wood can be used with polyethylene. Listed here are a few of the popular combinations and the advantages of each.

Polyethylene Coated:	Major Advantages of the Combination
Paper	heatsealable, attractive, greaseproof, moisture proof
Paper Board	leakproof, non-flaking, continuous coating
Foil	impermeable to gas, attractive, heat seals
Cellophane	greaseproof, easily machine handled, low oxygen permeability
Cloth	moisture proof, heat seals
Metal	corrosion resistant, moisture proof
Wood	moisture proof

In addition to these more common polyethylene coated materials listed, in sophisticated combinations such as polyethylene terephthalate, polyvinylidine chloride and polyethylene may be obtained. This particular material is exceedingly tough, permits strong heat seals, handles well on wrapping machinery and has low gas, moisture, grease and odor permeability. It is now being used for vacuum packaging and cook-in pouches. ☐ Coatings or laminations on films, foils, paper, paperboard and cloth can be economically applied by extrusion coating techniques. Metals and wood are readily adaptable to finely divided polyethylene coatings. Any resin supplier or converter is ready to provide assistance in selecting the best possible combination of polyethylene and substrate. ☐ The growth of polyethylene in the rigid and semi-rigid container field has been spectacular in the past few years. New resins plus improved molding techniques now permit the economical fabrication of containers of all shapes and sizes, with any color or design. ☐ The major applications of polyethylene in this area include squeeze tubes and botties, rigid bottles, drums and carboys. Polyethylene can also be used as a closure for containers made of other materials, or simply for closure liners. ☐ The major characteristics of polyethylene making it desirable in rigid and semi-rigid containers are chemical inertness, light weight, toughness, low temperature flexibility, appearance and cost. Polyethylene film can be used as a lining material for other containers such as metal or fiber drums, hogsheads, boxes and cartons. In this application polyethylene is strictly a protective barrier, affording protection against loss by sifting, attack by insects, corrosion, and moisture loss or gain.

SHEET MATERIAL

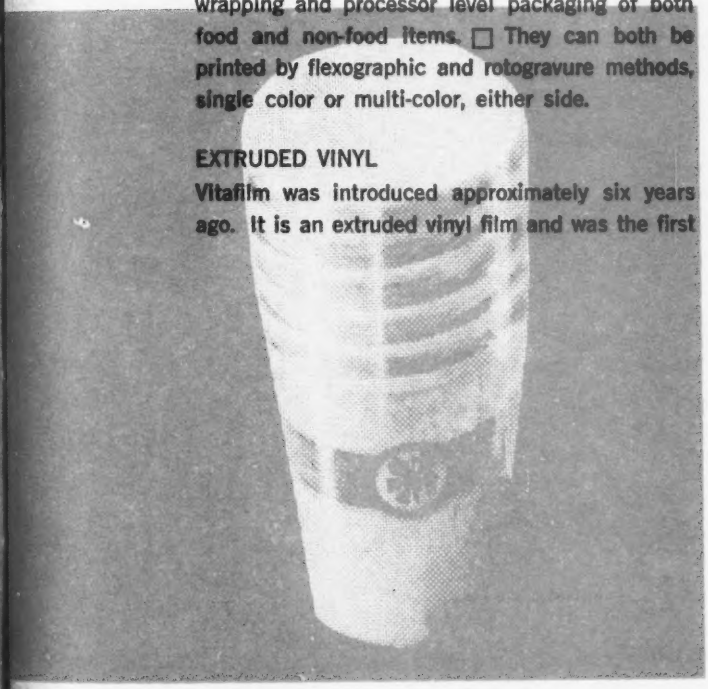
Polyethylene in sheet form is generally used in some type of thermoforming. Blister and skin packaging and pre-formed containers such as those used in restaurants for individual servings are a few examples. ☐ Packages made from sheet material have a twofold advantage. They protect merchandise and they display it in an eye-appealing manner. The blister and skin packages have been successful in packaging hardware items. ☐ Polyethylene has developed to the point where the package designer can now consider its use in one form or another for almost any packaging application. However, due to the wide variety of properties available from this family of resins, depending on resin type and processing technique used, consultation with the converter or resin supplier is a tool available to the package designer. ■

By A. E. Boedeker, Art Director, The Goodyear Tire & Rubber Company, Akron, O.

vinyl film

Because packaging of food is making such rapid strides with the supermarket method of merchandising of foods, and because of the increasing consumer demand for "see through" flexible containers, the whole field of transparent flexible packaging offers great growth potential for the designer.

Our company manufactures two such films—Vitafilm and Pliofilm. They are quite different, yet have many things in common. Both are transparent, flexible, durable, and grease and oil resistant. They both resist puckering, heat seal readily, are dimensionally stable and machine efficiently. ☐ One is solid in roll form, while the other comes in both roll and sheet form. Both are manufactured in a variety of gauges, and are used for in-store wrapping and processor level packaging of both food and non-food items. ☐ They can both be printed by flexographic and rotogravure methods, single color or multi-color, either side.



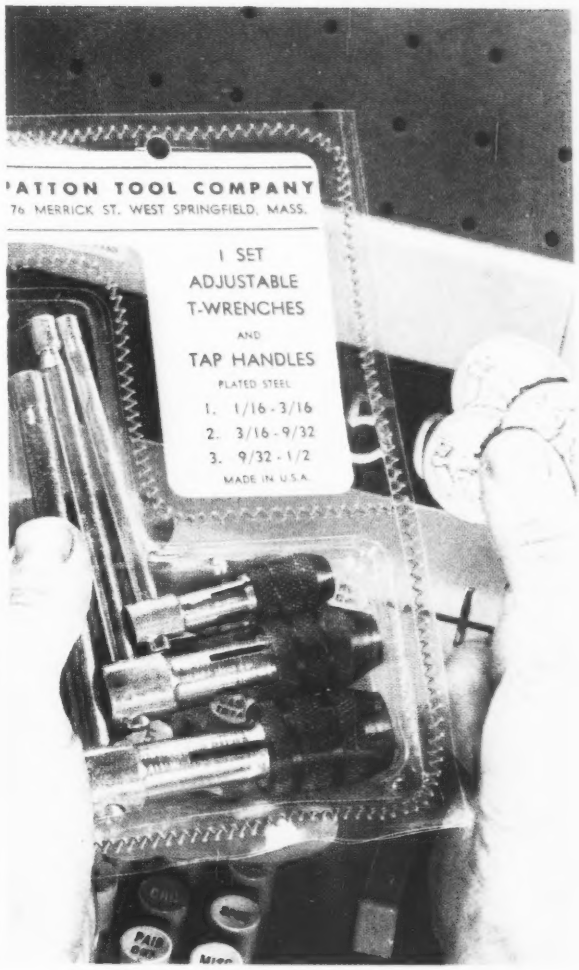
EXTRUDED VINYL

Vitafilm was introduced approximately six years ago. It is an extruded vinyl film and was the first of this type to be produced on a commercial basis for packaging. While originally developed for the packaging of textiles, paper products, hardware items and other products requiring a clear, strong film possessing good aging characteristics, recent developments have resulted in food grade films which are currently being used commercially for the packaging of cheese, produce, bacon, frankfurthers, luncheon meats and other items. ☐ Of special interest to the designer is Vitafilm's use for new thermoform packaging techniques. This type doubles as a display. A combination of both Vitafilm and printed paperboard, this package has eye-appeal for the prospective purchaser of drugs, cosmetics, toys, hardware and many other products. ☐ The newest branch of the family tree, Vitafilm Type F, has been approved for commercial food packaging by the Pure Food and Drug Administration. It is pleasant to the touch and can be laminated to paper, film or foil to create pouch packages for candy, nuts or dried vegetables. This type can also straight-wrap processed meats, produce, cheese, baked goods, or over-wrap trays and cartons of cookies, cereals, crackers, dried food, etc. ☐ Aesthetically, extruded vinyl has clarity and sparkle. Functionally, it is economical and has superior strength qualities to withstand shipping and customer handling abuse. It is split-free, run-free, puncture resistant, without pinholes. It has resistance to sunlight and superior tensile strength. ☐ Since extruded vinyl film has no mois-

ture content, it will not "dry out" and become embrittled when left on the shelf for an extended period of time. It maintains its original strength despite drastic humidity changes. ☐ It is an excellent heat sealing film and, unlike some other plastic films, has a relatively wide heat seal range, sealing to an airtight closure. This is the fundamental reason for its fine machine wrapping properties. ☐ Vitafilm is available in a wide variety of weights and types, both in food and non-food grades. Thicknesses are available from one-half mil, .0005 inches to seven and one-half mils, .0075 inches. Types and weight of film to be used depend on end-use requirements. You will want to refer to the film manufacturer for proper film recommendations, as characteristics do vary somewhat with gauges and types. ☐ Recent technical developments have resulted in many new types and uses. The meat-wrap field is using it for frankfurters and bacon; the fresh produce field is wrapping vegetables in it.

TRANSPARENT FILM

Pliofilm, our other transparent flexible packaging material, was first introduced in 1936. It is essentially a transparent rubber hydrochloride film. Available in a wide range of gauges, it is tough and can be pulled tightly over the most unusual shapes. This makes it especially useful for large, irregular cuts in fresh meat packaging. It is also used for fish, poultry and for fresher storage. ☐ Pliofilm provides protection against air, moisture and liquids, and is greaseproof. Because of these characteristics, it is used for coffee, bread, pie mixes, butter, margarine, lotion, processed meats and laminations of all types. ☐ Of interest to the designer is Pliofilm's use as window packaging for bacon, cookies, sausages and doughnuts. Dimensionally stable, Pliofilm will not develop wrinkles and will not sag when exposed to high humidity. The puncture-resistance of this film is another basic quality that makes it particularly suitable for window cartons. Pliofilm can be run on window-cartoning machines, using latex-based adhesives. ☐ Pliofilm can be stretch laminated and still remain heat-sealable, pinhole-free and greaseproof. In stretch laminating it can be stretched to five times its original area and laminated to practically any non-extendable material. Starting with .00075 inch thick film and stretch laminated, Pliofilm can be thinned to .00018 gauge. ☐ This film is thermoplastic at a temperature of 225 degrees F. When heated under pressure between this and 260 degrees, a welded bond results that is as strong as the Pliofilm sheet itself. ☐ A new development is a type exceptionally suited for bread overwrap and other bakery items. In addition to toughness and high degree of sparkle and transparency, this type offers a soft pleasant feel—a desirable feature in bread packaging. ☐ Its wide heat seal range and accurate gauge control suit it for high speed machine overwrapping of bread. ☐ For the designer, when designing packages with these two films, it is important to remember that automatic machine wrapping of them necessitates equipment designed for use with thermoplastic films. Conventional, cellophane-type machines must be altered in the film feed sections, the heat seal sections, and sometimes in the folding section. ☐ A staff of engineers is available to effect machine conversion on most existing packaging machines. ☐ New equipment, specifically designed is available from all large machine manufacturers. ☐ Testing is also available. ■



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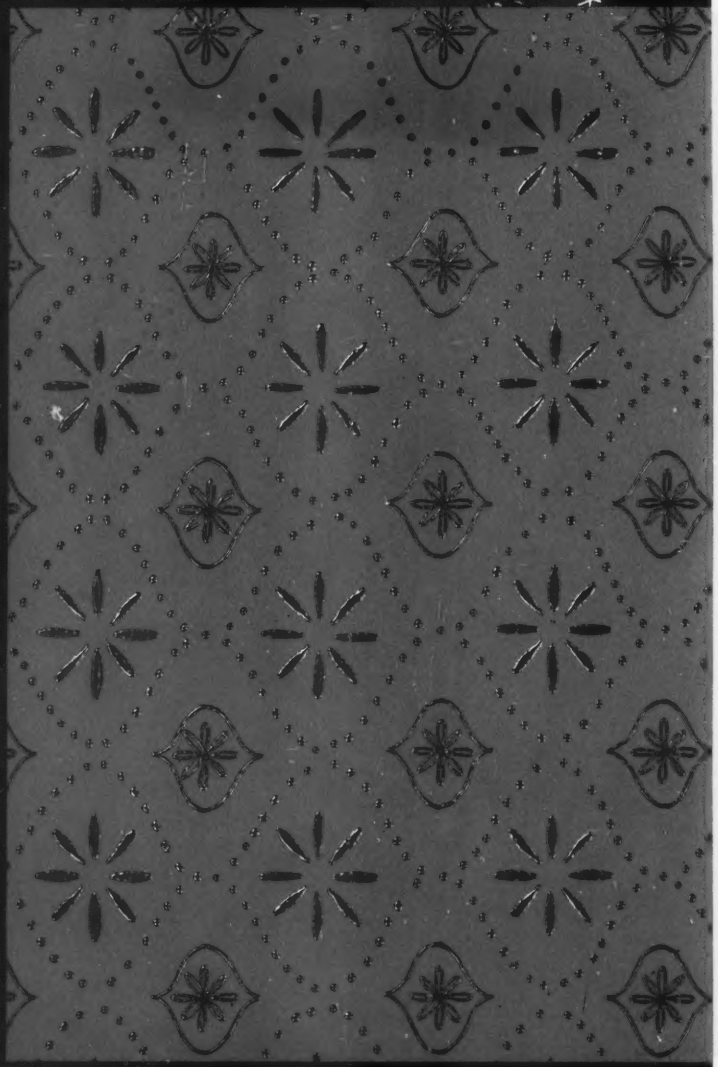
with HIGH RAISED and sparkle designs on CONTINUOUS ROLLS

A completely new, low priced prestige paper for the packaging field, Rayz-Brite is available in over 150 combinations of color, design and decorative material. Your product name and other information can also be raise printed on standard patterns if desired and exclusive designs will be produced on volume orders.

Ask your distributor to show you his complete swatch books of the deluxe Royalty and economical Consort grades. And have him give you an idea of how inexpensive Rayz-Brite really is.

Look at it; touch it; picture it as part of your package!

Want more information or FREE 20" x 26" SAMPLE SHEETS? Write today for the name of the distributor nearest you or directly to



Embossograph PROCESS COMPANY, INC.

1720 FOURTEENTH AVENUE, BROOKLYN 18, N.Y. ■ ULSTER 4-6773

SERVING THE GRAPHIC ARTS INDUSTRY FOR OVER FORTY YEARS

PART III
Packages designed with the materials in mind

LIKE GRANDMA'S

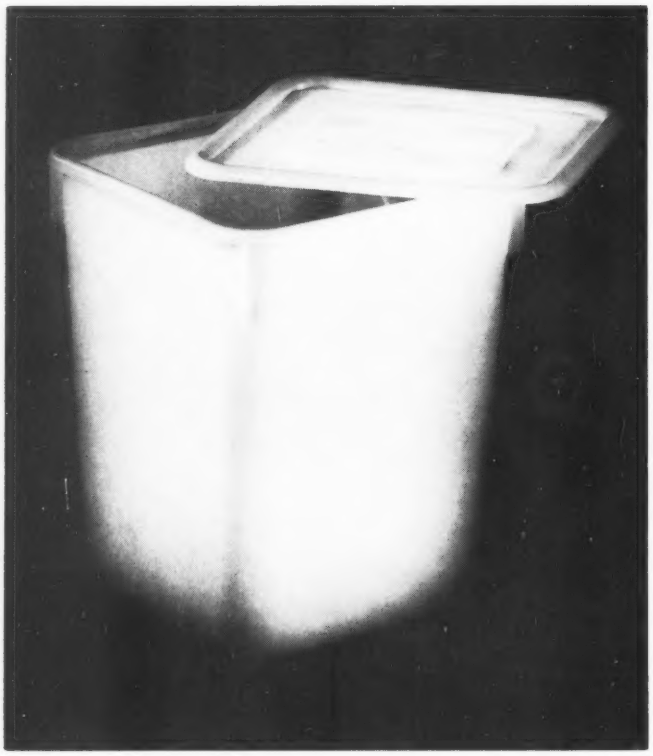
A plastic Cel-O-Seal band solved two important problems for J. M. Smucker Company preserve packaging. To keep an old fashioned motif to the product line, the company chose a blown diamond-decorated jar with a glass lid which when placed on the consumer's table would act as an appealing jar with no commercial aspects. The problem was how to achieve an effective seal and at the same time maintain the glass lid. A metal side-seal closure bearing a coat-of-arms in three colors against a white background was used to seal in the flavor of the contents. The Cel-O-Seal band was then applied to the jar simultaneously with the glass lid. In addition, the band solved the problem of where to put the company name since they wanted to use a plain label with very little print. The band contains this identification in Old English Text, as well as the brand name and weight.

Converter: Armstrong Cork Company
Material Manufacturer: duPont

FIRED-ON CERAMIC COLOR

The uniqueness of his Dijon mustard jar design is not in the material, but in its decorating process. The process is fired-on ceramic color, which makes possible a variety of interesting finishes and techniques involving line, mass, and shadow.

Designer and Converter: Pemco Corporation, Baltimore, Md.



MANY FACES OF PLASTIC

The properties of high density polyethylene played an important role in the design of this reusable storage or tote box. The plastic container is built to do a storage job besides serving as a receptacle that is easily emptied and returned. According to laboratory tests for stress and strain, the container is failure-free when dropped from a height of eight feet while holding 92 pounds weight. Tests also showed very little bulging when the 16″ x 20″ container was filled with 132 pounds of water per unit. In addition, to insure solid stacking without fear of tipping, the small feet on the bottom of the container have been so designed that when the container is turned 90° they span over the lip of the container under. Containers weigh six pounds and are available in natural frost white, and can also be produced in special colors.

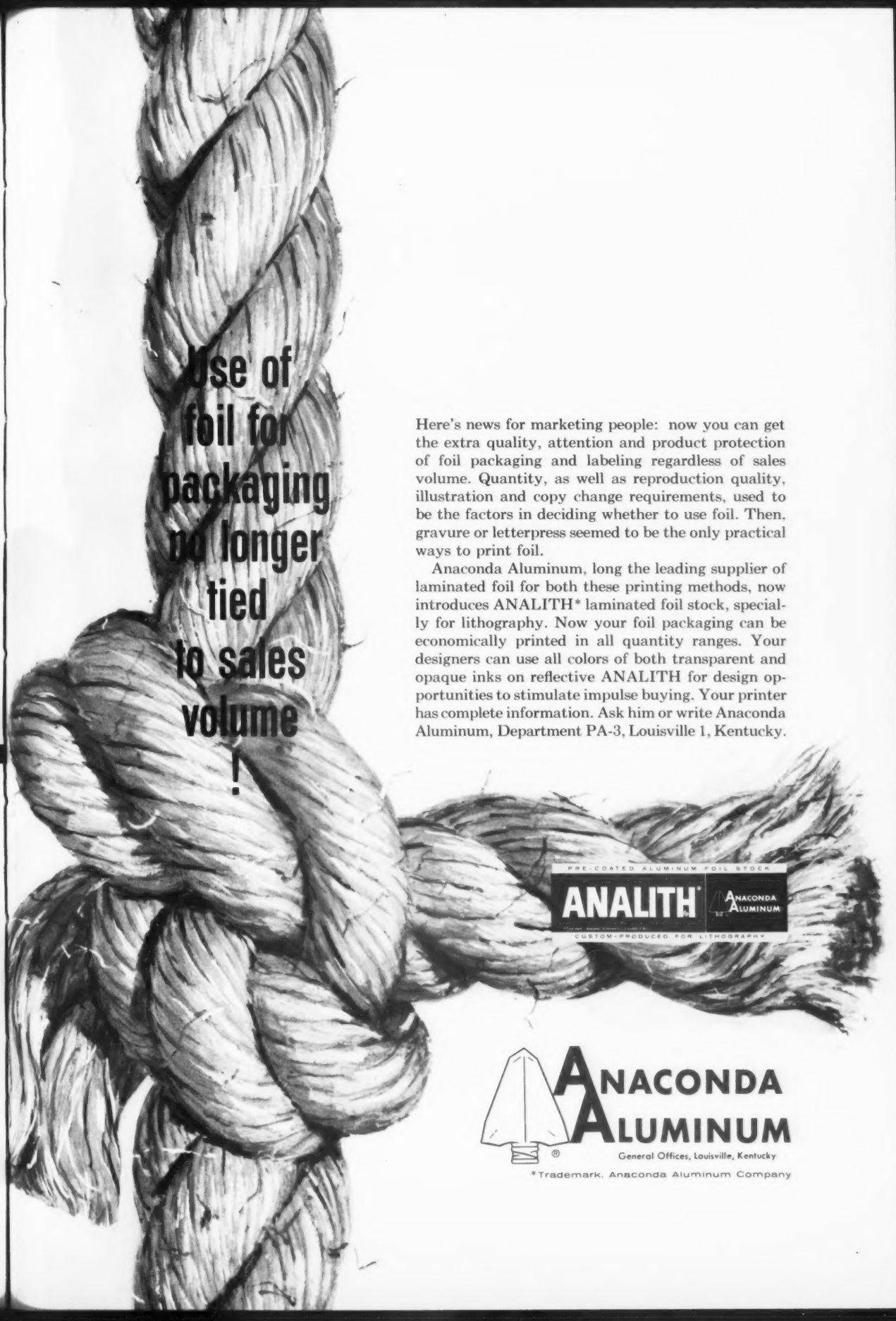
Designer and Converter: Como Plastics Inc., Columbus, Ind.

Materials Manufacturer: Phillips Chemicals Co., Bartlesville, Okla.

BAKED BEANS IN RIB FOIL

Designed to command consumer attention, provide convenience, and give complete product visibility, this package incorporates a ribbed side wall construction along with the cook-in advantages of aluminum foil. To add extra merchandising appeal, the container was fabricated using color coated aluminum. A bright copper color was chosen to compliment the color of the product. Since one objective was to display the product, a clear printed snap-on plastic cover was selected. The cover provides complete visibility plus reclosure convenience.

Designer: Hayward R. Blake, Ekco-Alcoa Containers, Inc., Wheeling, Ill.


Use of foil for packaging no longer tied to sales volume!
PRE-COATED ALUMINUM FOIL STOCK
ANALITH
ANACONDA ALUMINUM
CUSTOM-PRODUCED FOR LITHOGRAPHY

Here's news for marketing people: now you can get the extra quality, attention and product protection of foil packaging and labeling regardless of sales volume. Quantity, as well as reproduction quality, illustration and copy change requirements, used to be the factors in deciding whether to use foil. Then, gravure or letterpress seemed to be the only practical ways to print foil.

Anaconda Aluminum, long the leading supplier of laminated foil for both these printing methods, now introduces ANALITH* laminated foil stock, specially for lithography. Now your foil packaging can be economically printed in all quantity ranges. Your designers can use all colors of both transparent and opaque inks on reflective ANALITH for design opportunities to stimulate impulse buying. Your printer has complete information. Ask him or write Anaconda Aluminum, Department PA-3, Louisville 1, Kentucky.

ANACONDA ALUMINUM

General Offices, Louisville, Kentucky

*Trademark, Anaconda Aluminum Company

A LIVELY PACKAGE

This solid fibreboard package has been designed to take a lot of abuse from the product inside.

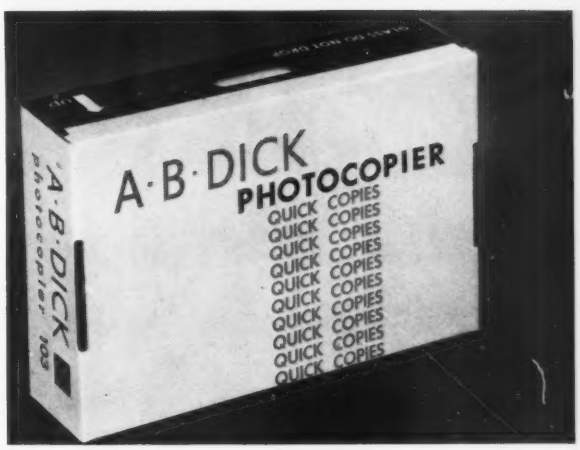
The package is really a pet carrier used as a promotion idea by the Santa Fe Railroad for passengers taking animals along on their trips. The material was selected for its strength and toughness. The painting is in yellow and dark brown over the natural fibreboard coloring. Dark slots on the top and sides are air vents.

Designer: Container Corporation of America, Chicago, Ill.

THE SALESMAN'S WARES

A die-cut handle on this white corrugated cardboard carton for A. B. Dick's new photocopier gives it an additional function. It allows the salesman to easily carry about his wares. At the same time, the cardboard handle folds down for easy shipping. The carton is printed in red and black. Repetitive design of the words "Quick Copies" emphasizes the most important characteristic of a photocopier—the ability to make copies quickly, and in quantity. Model number on each end of the carton facilitates quick identification in the warehouse.

Designer: A. B. Dick Co., Chicago, Illinois



FROM WOOD TO CORRUGATED

Change from a wood-cleated pack to a corrugated shipping container for the Duro Jet Water System resulted in a 36 per cent saving in materials and a 50 per cent cut in packaging time for the Duro Company. The new container has two die-cut inserts to hold the top and bottom of the water system in place. Greater ease of packing, warehousing and opening and better product identification are added advantages.

Designer and Converter: Olin Mathieson, New York, N.Y.

performs
magic
for
your
hair
FANCY FREE
THE
BALANCED
PERMANENT
WAVE
BY
HELENE

new twist for a hair-do with

. . . BRITE-PAK ENAMEL COAT

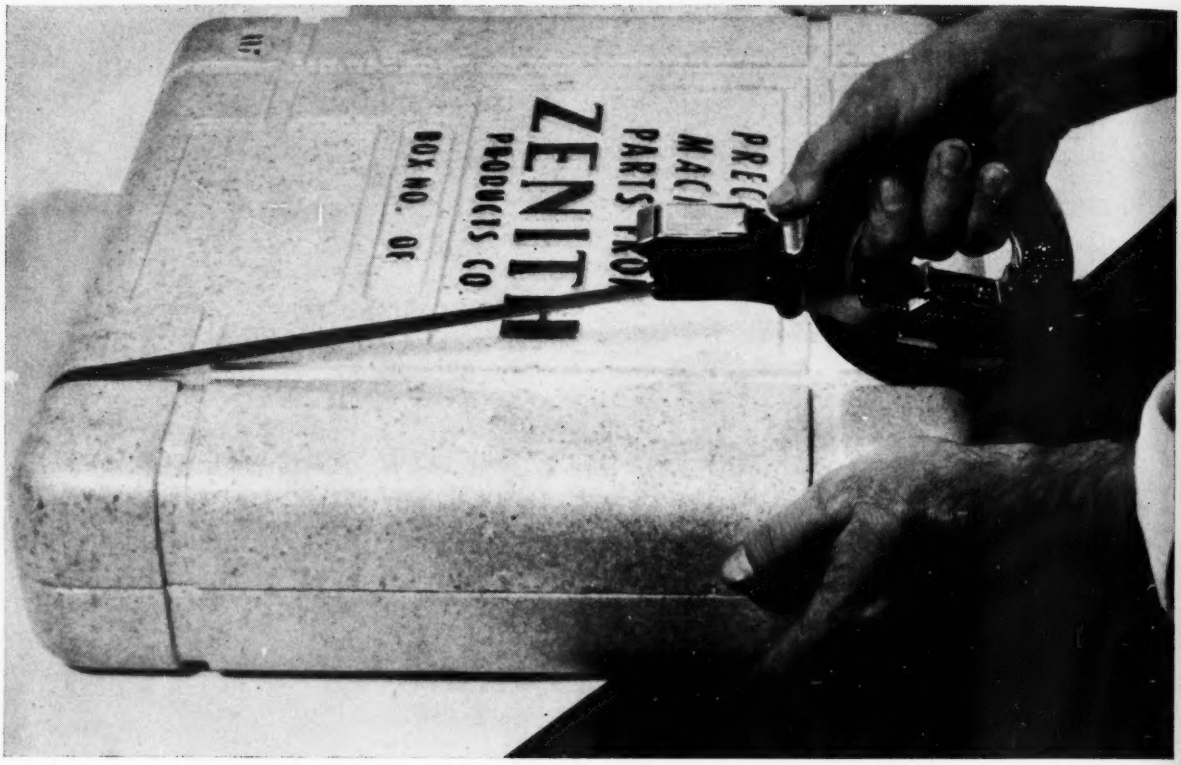
A proud, perky package with an attractive, snowy-white interior enhances the feminine appeal of *Fancy Free*, the new professional balanced permanent wave by Helene Curtis. This is another reason so many smart women find *Fancy Free* hard to resist.

The *Fancy Free* package . . . beautifully produced by one of our customers . . . uses Brite-Pak Enamel Coat bleached board to obtain the extra sparkle—*inside and out*— that means so much in sales.

Enamel Coat's smoothly gleaming surface is unsurpassed for fine, full color process printing and for brilliant illustrations. Yet, it is truly economical.

To see how Brite-Pak Enamel Coat can help you upgrade your packaging, write to Bleached Board Division, West Virginia Pulp and Paper Company, 230 Park Avenue, New York 17, N. Y.

West Virginia Pulp and Paper



POLYSTYRENE CONTAINER REINFORCES

Colored pressure-sensitive tape closes and reinforces this new type of polystyrene container designed to hold delicate gear-pump parts, according to W. H. Nichols Co.

The filament tape rapidly closes the two halves of the featheweight container securely and attractively, assures maximum seal despite shock or possible damage caused to the container.

With acetate backing, rayon filaments, and tensile strength of 250 lbs. per sq. in. of width, the reinforced tape was selected over strapping which could not resist corrosion and was unable to remain tight and conform to the container during rough treatment.

The blue tape—contrasts with the light blue beads of the container and the trim around the address label.

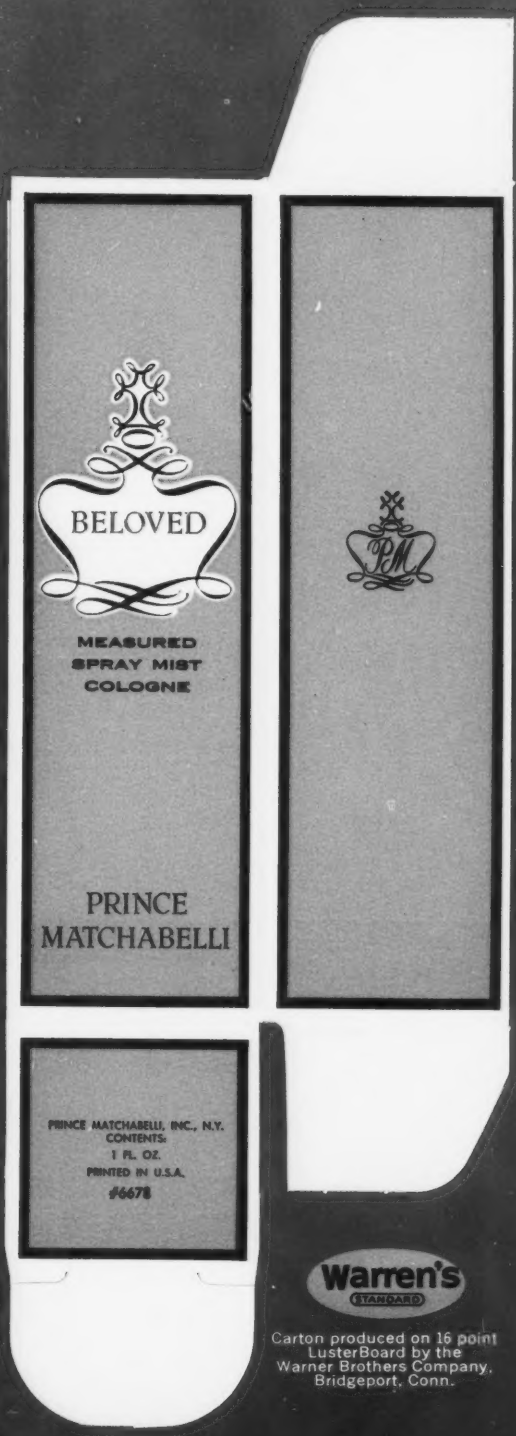
Material Manufacturer: 3M Company, St. Paul, Minn.

How LusterBoard helps sell cologne to the fair sex

A dainty feminine product like Prince Matchabelli's "Beloved" has even more selling power when it is attractively packaged. And you can see how wonderfully LusterBoard does this job! Clean reproduction of pastel colors and crisp gold stamping on LusterBoard's mirror-smooth surface attract feminine shoppers, help make sales. A handsome LusterBoard package can help you sell more, too.

Here are some of its advantages: • Smooth folding, superb embossing effects • Fast ink setting • Maximum fidelity of halftone reproduction • Range of 14, 16, 18, 20 and 22 point thickness.

Samples, demonstration pieces, and technical information are available from: S. D. Warren Company, 89 Broad Street, Boston 1, Massachusetts.



Carton produced on 16 point LusterBoard by the Warner Brothers Company, Bridgeport, Conn.

WARREN'S LusterBoard

BLISTERS FOR PILLSTERS

The corner drug store has begun to merchandise its ethical prescription service in this blister package, consisting of two parts: 1) a printed backing cardboard on which the pharmacy permanently records the customer's name, prescription number, doctor's name, and the amount of the purchase. 2) a clear, plastic covering which goes over the prescription vial when it is placed on the card. A pressure sensitive flange seals the prescription to the card.

Designer and Converter: The Jackmeyer Corporation, New York, N.Y.

FOIL AND GLASSINE DIET

The change from a printed carton to a golden foil bag lifted sales for Chicago Dietetic Supply House. The new package also helped cut cost and packaging time. The bag, a lamination of .00035 foil and bleached glassine, is flexographically printed in four colors, dominated by a gold background. The bag's inner face of glassine furnishes a grease resistant barrier that preserves outer material and helps guard the product's freshness.

Designer and Converter: Milprint, Milwaukee, Wisc.

WEIGHTLESS WEIGHT

A new, almost weightless, foam plastic material being used to package "Fish'n Fool" lures, provides a display package which combines protection with economy.

The new material, Arlite extruded film, is made of Dylite expandable polystyrene. This one is pastel green in color, other colors in gauges ranging from .007 to .150 and up to 38 inches in width, are also available.

Converter: Applied Research and Development Corporation, Chippewa Falls, Wisc.

Material Manufacturer: Koppers Company, Pittsburgh, Pa.

The Quality Image
MUST BE REFRIGERATED
TO OPEN LIFT THIS TAB ALONG ARROWS
RICH IN GOLDEN MAZOLA LIQUID CORN OIL
MAZOLA MARGARINE
MAZOLA LIQUID CORN OIL, PARTIALLY HARDENED SOYBEAN & COTTONSEED OILS, SKIM MILK, SALT, MONOGLYCERIDE, LECITHIN, ISOPROPYL CITRATE (0.01%) TO PROTECT FLAVOR & 15,000 UNITS VITAMIN A & 2,000 UNITS VITAMIN D ADDED. ARTIFICIALLY COLORED WITH CAROTENE & ARTIFICIALLY FLAVORED. MINIMUM DAILY NEEDS SUPPLIED BY 2 OZ VITAMIN A—47% OF ADULT'S & 62% OF CHILD'S; VITAMIN D—62% OF ADULT'S & CHILD'S
BEST FOODS DIV. CORN PRODUCTS COMPANY, NEW YORK, N.Y., U.S.A.
NET WT. 1 LB.
MAZOLA

MAZOLA MARGARINE IS ANOTHER FINE PRODUCT OF BEST FOODS

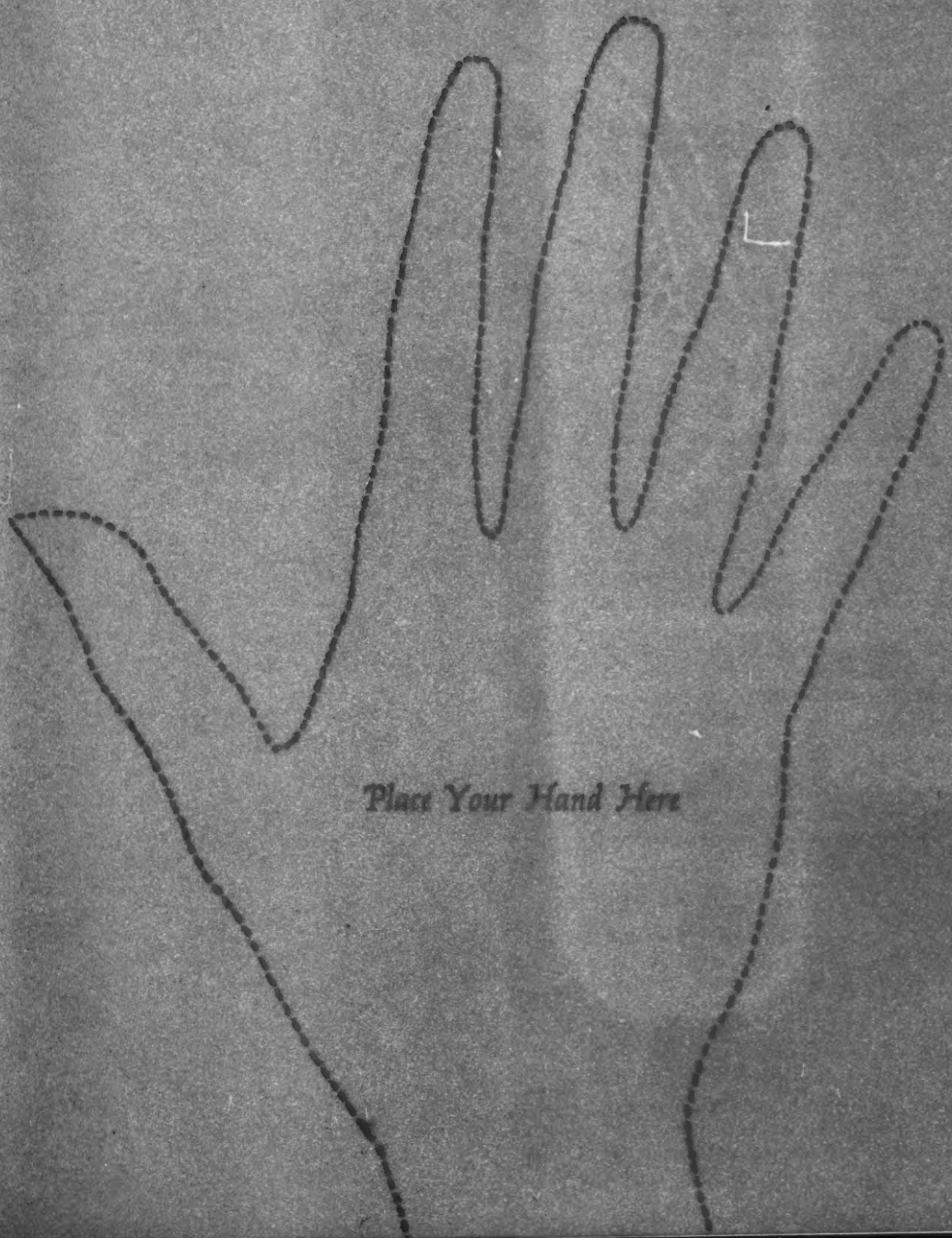
Look to the Leader in Aluminum Packaging

REYNOLDS ALUMINUM

The beautiful Mazola® Margarine foil carton irresistibly evokes a Quality Image of the product. Its dominant feature — the golden ear of corn — exemplifies not only Reynolds fine gravure printing, but also Reynolds distinctive Register-Embossing. See how Reynolds Aluminum packaging will enhance your product's Quality Image. Call any Reynolds sales office. Or write to Reynolds Metals Company, Richmond 18, Virginia.

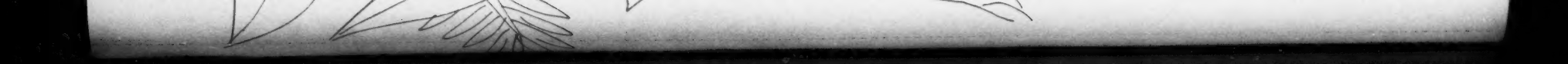
Seal tells all!

Watch Reynolds TV shows: "HARRIGAN AND SON" Friday evenings, "ALL-STAR GOLF" Saturdays, ABC-TV.


Place Your Hand Here

Velour Adds a Touch of Luxury to your Packaging

Women love the look and feel of luxury. Velour's lustrous beauty appeals both to their eye and their touch. And now that full color photography can be printed on velour *imagine the endless possibilities in creative designing this affords. This insert is Rayvelene lavender, distributed by Marquardt & Co., 155 Spring St., New York, N. Y. For information on all types of velour paper and processing (you'll find velour surprisingly inexpensive), write or call: Flock Embossing Corp., 370 Seventh Avenue New York, N. Y.*



packaging design

PLEASE SEE THAT I RECEIVE, WITHOUT OBLIGATION, THE ITEMS CHECKED BELO

☐ A1	☐ A6	☐ A11	☐ A16
☐ A2	☐ A7	☐ A12	☐ A17
☐ A3	☐ A8	☐ A13	☐ A18
☐ A4	☐ A9	☐ A14	☐ A19
☐ A5	☐ A10	☐ A15	

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____

packaging design

DESIGNER'S SERVICE CAR
PACKAGING DESIGN
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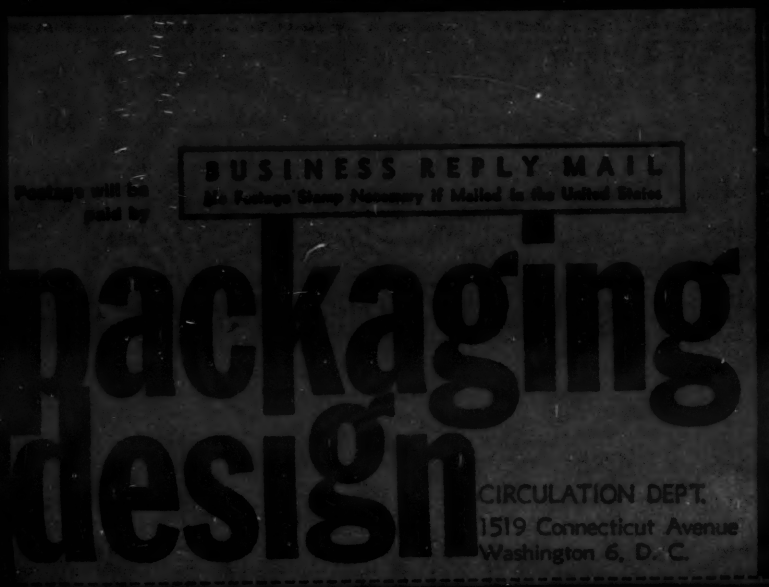
Washington 6, D. C.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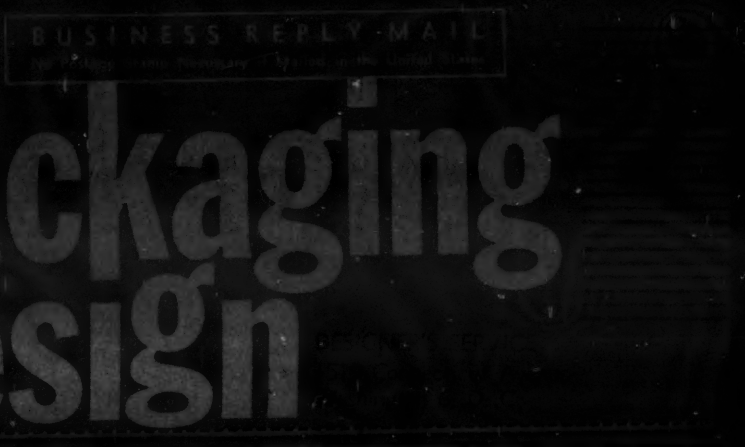
CIRCULATION DEPT.
1519 Connecticut Avenue
Washington 6, D. C.


BUSINESS REPLY MAIL
packaging
design

DESIGNER'S SERVICE

Here are booklets, samples, design aids of various kinds available to you from packaging material companies. About half are new, half repeated from PACKAGING DESIGN's *past three issues. After selecting the items you want in this page, check the corresponding number on the stamp-free, addressed reply form provided here. Fill in your name and address, and mail. We will forward your requests.*

DECAL SURVEY
A survey of decals, adhesive backed identification products and decorative trim is available. Portfolio covers 11 basic materials from plastics to aluminum. Allied Decals, Inc. (A-1)

FELT APPLICATION GUIDE
This eight-page booklet describes some the varied uses of laminated, coated and impregnated felts, manufactured for industrial and decorative uses. American Felt Co. (A-2)

MULTI-PACKS
A booklet titled "Multi-Packs with Avisco Cellophane" describes how sales may be increased with multi-packs. American Viscose Corporation. (A-3)

METALLIC COATED PAPERS
Sample book is available of metallic coated gold, silver, and copper finished paper that accept halftones, four-color process, and practically all forms of printing. Artcote Papers, Inc. (A-4)

POLYESTER SETTING
Technical information on specific uses of a new polyester sheeting is available. Eastman Chemical Products. (A-5)

TENITE POLYPROPYLENE
"Preliminary Information About Tenite Polypropylene" booklet discusses this plastic for molded applications that require toughness and heat resistance, as well as for film, paper and wire-coating, blown bottles, and pipes. Eastman Chemical Products, Inc. (A-6)

DECORATIVE PAPERS
Raised and sparkle designs in 176 combinations of papers and colors, and designs will be shown to you by distributors, who will also provide free 20" x 26" sample sheets. Embossograph Process Company. (A-7)

RECLOSABLE FOLDING CARTONS
Three types of reclosable folding cartons have flip lid, reclose with an audible click. Can be custom designed in a range of sizes and shapes. Samples provided. Federal Paper Board Company. (A-8)

EXTRUDED VINYL FILM
Properties of extruded vinyl film suitable for transparent packaging of products like paper, textiles, toys, food, are described in this 16-page catalog. Goodyear Tire and Rubber Company. (A-9)

DIRECTORY OF SUPPLIERS
A 36-page "Directory of Plastic Packaging Suppliers" lists proprietary and custom plastic molders and extruders in the United States, describes each company's type of service. Koppers Company. (A-10)

FOIL SPECIFICATIONS
This booklet lists specifications for foil thicknesses, weights of papers commonly used in foil laminations, basic paperboard types, methods of testing lacquers on foil and has a glossary of terms. Laminated Foil Manufacturers' Association. (A-11)

FILMS AND MACHINES
A 32-page guide to today's variety of laminating films and packaging machines is available at no cost. Lassiter. (A-12)

SELF LINER
Samples and information on a polystyrene compound that achieves a velvety feeling in the packag without use of fabric linings. Nashua Corporation (A-13)

PASTRY PACKAGING
An illustrated folder on the cellophane packaging of cookies and crackers in cartons, fractional packs, bags or tray overwraps, is available. Packaging Division, Olin Mathieson Chemical Corporation. (A-14)

ALUMINUM AEROSOL
An eight-page catalog about aluminum aerosol containers, lists the 10 sizes, ranging from one-half to four fluid ounces, and describes the inside resin coatings and exterior finishes. Peerless Tube Company. (A-15)

CONTESTS FOR STUDENTS
Students in institutions higher than high schools in 8 States are eligible to compete in a packaging design contest. States are those in which the sponsoring companies' divisions are located: Alabama, Florida, Illinois, Iowa, Michigan, Ohio, Texas, Wisconsin. Full information available from Folding Carton Division, St. Regis Paper Co. (A-16)

PRINTING ON POLYETHYLENE
A 16-page booklet titled "Printing on Polyethylene" brings basic information for printing on polyethylene film or molded containers. U.S. Industrial Chemicals Co. (A-17)

LINERBOARD SAMPLES
Samples are offered of a linerboard which carries the goods to market, and can also be used for self-sealing display. West Virginia Pulp and Paper. (A-18)

PACKAGE CONSTRUCTION
A design organization has developed the "Delran," a package construction with no visible holding devices that is expected to have wide application to various types of permanent and promotional packaging. Samples available. S H & L (A-19)

1519 Connecticut Avenue
Washington 6, D. C.

LETTERS

Here are some of the answers received from readers to a questionnaire on "What more can packaging material companies do to help you?"

Provide more research and development services.

Lloyd L. Duke
Mead Johnson

Be honest in your claims and point out areas where your material does not function satisfactorily.

Hayward R. Blake
Ekco-Alcoa

Constant presentations through advertisements and samples of new and existing materials in use.

Anthony J. Todaro
Barr Rubber Products

Better inspection—quality.

H. B. Moyer
Miles Laboratories

Keep us informed, but not hard sell.

Robert Sidney Dickens
Robert Sidney Dickens, Inc.

When new materials are developed, a more comprehensive presentation of their values and uses

Ernest L. Shapiro
Alberto Culver

Better design service.

William Rowe
Hiram Walker & Sons

More technical assistance to our packaging suppliers

Warren R. Jones
International Silver

Supply samples of material in sizes large enough to use on actual presentation sketches (paper, etc.) and actual samples.

Larry L. Goodwin
Rexall Drug

Bring us more new ideas now existing on how New Packaging materials can be used

Thomas Harrison
Lehn & Fink

Be sure that representatives are correctly and currently informed.

D. E. Glassce
Purex

New materials in use for better point of purchase package displays.

Geo. B. Nelson
Deere & Company

Suggest other creative uses of their product.

Jerald O. Page
Robbins-Caver-Page

More samples of new products.

Austin Harmon
Harmon Smith

Make samples of unusual applications available.

F. Walter Perl
Westinghouse Electric

Cooperate in new product experiments, without charge.

Jaap Penraat
Jaap Penraat Associates

Understand and be sympathetic to the position of the independent design organizations who depend upon the services of material manufacturers but unfortunately can do no more than strongly recommend a particular brand or product or company.

Albro F. Downe
Lippincott & Margulies

Keep more adequate supplies of non-standard materials for testing, etc.

Thomas Foraman
C. H. Foraman

(Continued on page 74)

Out of Chemistry,

Electronics, and

Advanced Technology...

Mural in the ALA Internat

AN ENRICHED TRADITION OF CRAFTSMANSHIP —

A technical revolution in the graphic arts is in full swing across the nation—

- superb full-color offset lithographic inserts for your daily newspaper
- unparalleled sureness and accuracy in reproducing every type of copy
- preparation and press time dramatically reduced
- lower costs and greater appeal for periodicals, advertising, educational aids, and the myriad forms of graphic art essential to our commerce, industry and culture.

Unequalled in history, these advances are in the making through the creative power of modern science applied to offset lithography.

EIGHT DECADES OF PROGRESS

Working in the forefront of this movement are the approximately 40,000 skilled men and women of the Amalgamated Lithographers of America. For seventy-eight years, ALA members have provided the skills and knowledge to achieve constantly higher quality while steadily lowering costs—thereby making Lithography the most rapidly growing method of reproduction in the Graphic Arts.

A HEARTY WELCOME FOR NEW METHODS

Today, in more than 3,000 ALA shops throughout North America and Hawaii, the ALA is continuing and enlarging its long-standing program of in-plant training and technical education—a program reflecting the principle that *A Good Craftsman is Good Economy.*

With the advent of automatic control for high-speed precision and flexibility of production, ALA members are continually broadening their

OF CRAFTSMANSHIP

the ALA International Offices in New York

SHIP — *A force for lithographic industry progress*

of America. s have pro- chieve con- y lowering y the most tion in the

METHODS

os through- ALA is con- ng program ducation—a nt *A Good*

ol for high- uction, ALA ning their

command of advanced techniques and equipment, such as—

- electronic devices for accurate register, masking and measurement of tone and color
- multicolor web-fed lithographic presses that lithograph and perfect fine quality finished sheets at unprecedented speeds
- new dampening and inking systems
- multimetal plates, pre-sensitizing, and brush surfacing for improved speed, greater and more economical press runs.

CRAFTSMANSHIP—A WAY OF LIFE

The technological wealth of modern lithography arises from full use of the resources of science. And from one thing more: the tradition of disciplined skill handed down by four generations of ALA craftsmen.

In furtherance of this tradition, ALA Local No. 1 and its officers foster improvement in every aspect of their art—through research... organized training in the plant and in special centers ...technical forums...and prompt dissemination of information on the latest materials and equipment.

Above all—as newcomers speedily learn—there's a special stimulation to accomplishment in daily contacts with fellow ALA members... in training under those who are masters of their craft... whose devotion to fine workmanship is infectious... whose committment to craftsmanlike ideals is bred by long-standing association with similarly skilled and responsible men.

AMALGAMATED LITHOGRAPHERS OF AMERICA
Local 1 · 113 University Place, New York 3, N. Y.

ALA men learn from master craftsmen

A Good Craftsman is Good Economy—an ALA principle

NATION-WIDE PRAISE FOR ALA POLICIES

National acclaim for ALA's contributions to the advance of the Lithographic Industry is without parallel in labor history. Here are a few representative comments from leaders in business, labor, and public affairs—

"A union that not only accepts labor-saving devices but actually pours funds into promoting their use. This magnificent dream is actually coming true in the Lithography Industry..." —THE WALL STREET JOURNAL

"The ALA is a magnificent lesson in Democracy."
—UNDERSECRETARY OF LABOR, JAMES T. O'CONNELL

"...Here I find a Union that...is actually investing money to help promote and to discover new methods of automation. This is truly unique and most distinctive, and I feel that this...is in line with American progress...recognizing that in automation we create more jobs, and we create new jobs."
—MARK HATFIELD, GOVERNOR OF OREGON

"The recently negotiated contract between Local 1 of the ALA and the Metropolitan Lithographers Association is exceptional...It is the fruit of a relationship between the union and the employers of unusual confidence and respect—also evidenced by the fact that their contracts have been negotiated for forty years without a single strike." —THE NEW YORK TIMES

"New York State is proud of the ALA's excellent record in the field of management-labor relations. They should also be proud of their enlightened attitude towards technological advancement in their craft, and the rapidity with which they have acquired new skills. The consequence is to be seen everywhere in the beauty of modern American Lithography."
—NELSON A. ROCKEFELLER, GOVERNOR OF NEW YORK

UNION DEMOCRACY IN ACTION

Founded in 1882, the Amalgamated Lithographers of America adheres to the principle of service to its membership and the Lithographic Industry at large.

All officers must be skilled craftsmen themselves. They are elected by sealed ballot referendum of the local rank and file membership.

Local No. 1, founded in 1882, carries forward this tradition of union democracy in the metropolitan area of New York. Here more than 8,000 ALA members serve the varied and exacting needs of the world's greatest concentration of publishing, communications, and graphic arts enterprises.

AMALGAMATED LITHOGRAPHERS OF AMERICA

Local 1 • Edward Swayduck, President • 113 University Place, New York 3, N. Y.

Designed by Robert Hallock Photography: Robert Emmett Smallman Lithography: Eastern Colortype Co

For your own pleasure . . . and when entertaining important clients

NEW YORK'S MOST DISTINGUISHED RESTAURANT

575 Park Avenue at 63rd Street

Reservations suggested for lunch and dinner

TEmpleton 8-6490. Open daily and Sunday

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One year—6 issues—$6 (regularly $9)

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☐ Payment enclosed ☐ Bill me

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Company .....

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City and State .....

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1519 Connecticut Avenue
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for quality foil
labels
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displays
wraps

Specialists in beautiful, accurate reproduction of the artist's design . . . whether he be industrial packaging designer, ad agency idea man or one of Foxon's own talented staff.

The Foxon Company

P. O. BOX 1178 · PROVIDENCE 1, R. I.

Offices in 38 Principal Cities

Gaspee 1-2386

Give us limitation and material sizes before designs are executed. Also tell us what printing processes can be used.

Wm. Onyon
Daud W. Evans

Have new materials ready for production runs before starting advertising campaigns and creating customer demand.

W. T. Dwyer
Tower Packaging

More technical bulletins.

Jules le Gutterman
Provocative Packaging

Provide useful printed material at regular intervals, giving brief facts rather than puffed-up advertising copy and samples: information through editorial pages, quick sampling service, quick delivery, consistency of quality of materials supplied.

Wm. de Majo
Wm. de Majo Associates

Keep us posted on new items and ideas.

Glenn Rabby
Owens-Illinois

Send catalog.

Alexander Drqajin
Thrifty Paper Boxes, Inc.

Better cushioning for low "G" value items.

B. A. Weber
General Electric

Show new ideas and new materials readily rather than be asked.

Edward J. Bennett
Lily-Tulip Cup

Supply bi-monthly or quarterly samples of new materials and folders of uses of materials.

Wayne F. Schlosser
Gardner Advertising

Be more fully aware of new developments in materials and methods, and be generally more creative.

John Williamson
Kordite Company

Let's hear from a few materials companies, by mail!

Matheson F. Green
The Parker Pen Co.

Get new ideas and let us in on them.

Chas. A. Onafor
Mead Johnson

Provide test samples.

R. M. Bates
ALD

More technical bulletins.

Guillermo Carvajal
Carvajal Cia. Ltda.

Suggest more creative constructions.

Robert R. Eganhouse
Aluminum Company of America

Pursue development of more materials for specific uses.

H. B. Pirtchett
Brown & Williamson

Conduct tests with products from various customers.

Lee A. Pritchard
Dixie Cup Division
American Can Co.

RUPPERT PEOPLE HAVE A THIRST FOR SELLING!

...it shows in their *bright new* "six-pack" designed by Ruppert Brewing Company. • To step-up their sales, sales-smart Ruppert has gone the distance. They've specified Cyanamid's famous brightener, CALCOFLUOR WHITE, for this carton by Coates Board & Carton Company. Added to the special white carrier board, Calcofluor White *whitens* white, *brightens* colors, *sharpens* type and design. • For super sales in supermarkets, for a more dramatic, stronger selling package, follow the simple Coates rule! Make sure your customers get the advantages of Calcofluor White in their carton board. • American Cyanamid Company Dyes Department/Bound Brook, New Jersey.

CALCO-FLUOR WHITE

CYANAMID

Which One Fits? There's just one. And it's equally true in packaging materials. The *right* material for your package might be film or foil, paper or paperboard. Whichever it is, Lassiter will use it—because we work with *all* major packaging materials. *All* printing processes. Why not let us show you how a Lassiter package can be your key to bigger sales?

LASSITER
CORPORATION
350 FIFTH AVENUE • NEW YORK 1

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